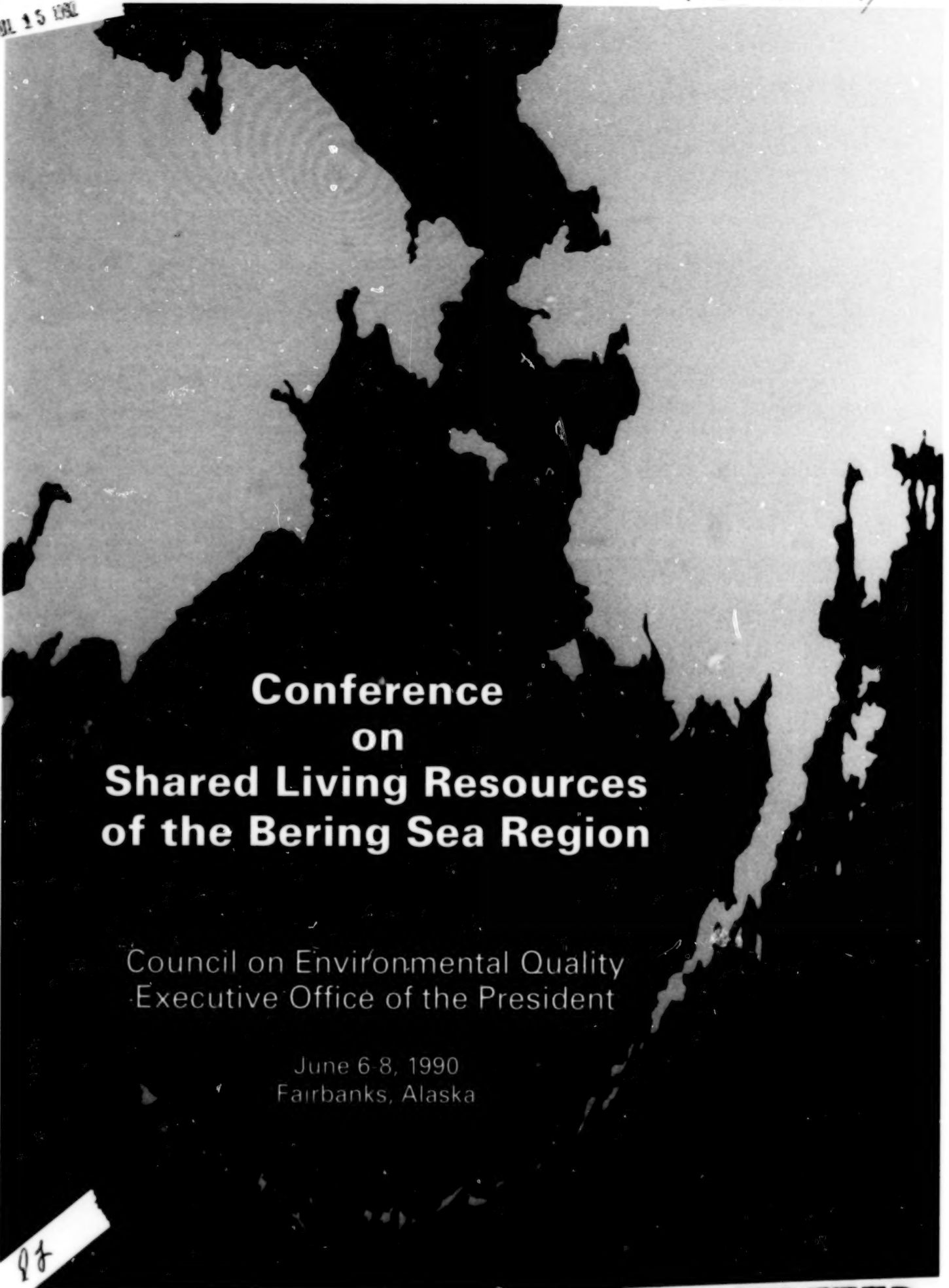


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A high-contrast, black and white map of Alaska and the surrounding Bering Sea region. The landmasses are depicted in solid black, while the water areas are in a light gray. The map shows the entire state of Alaska, including its major peninsulas and islands, extending into the Bering Sea to the west.

Conference on Shared Living Resources of the Bering Sea Region

Council on Environmental Quality
Executive Office of the President

June 6-8, 1990
Fairbanks, Alaska

98

COMPLETED

PROCEEDINGS

CONFERENCE ON SHARED LIVING RESOURCES
OF THE BERING SEA REGION

US-USSR Legal and Administrative Conservation Regimes

June 5 - 7, 1990 -- University of Alaska at Fairbanks

Held under the Auspices of the US-USSR Agreement on
Cooperation in the Field of Environmental Protection
Area XI
Legal and Administrative Measures

Sponsored by
The President's Council on Environmental Quality
The Department of the Interior
The National Oceanic and Atmospheric Administration
The Marine Mammal Commission
The State of Alaska
and
The Center for Marine Conservation

Richard Townsend
Editor



Walrus at Round Island, Bristol Bay, Alaska. U.S. Fish & Wildlife Service photo.

INTRODUCTION TO CONFERENCE PROCEEDINGS

"Let me just say one word, and that one word is 'justice'. Justice in Beringia will require us to develop and cultivate that value with respect to the indigenous peoples of this area, and with respect to the wildlife of this area." Professor Nicholas Robinson, conference proceedings at p. 322.

In these conference proceedings, you will find an impressive amount of knowledge and insight into the legal, administrative, and ecological complexities of the area called "Beringia". This conference commenced at an auspicious time for a region so long veiled by the "ice curtain" . . . immediately following discussion at the June, 1990, summit by Presidents George Bush and Mikhail Gorbachev about this shared northern border . . . their announcement of an international park encompassing American and Soviet land and aquatic areas in Beringia . . . their expressions of concern about depletion of fish stocks in the Central Bering Sea and their call for development of an international regime for the conservation and management of the living marine resources in that critical and currently unregulated area.

While the conference took place against a background of positive political developments between the United States and the Soviet Union, it also occurred in the context of tensions concerning the conservation and development of natural resources in this region. On the Soviet side, the conference occurred at a time of fundamental change in the Soviet Union -- dramatized by the rapid devolution of political power from the central authorities to republic and local authorities. The development of *glasnost* has freed the Soviet citizenry to express outrage over decades of degrading Soviet lands and seas; it has also dramatized the paucity of Soviet legal mechanisms to address these problems.

Conversely, the American side suffers from no lack of laws or administrative mechanisms. Rather, while the proliferation of statutes and regulations has done much to slow or reverse pollution and other degradation of natural resources, it also has, in many instances, highlighted the underlying tensions between competing interests for those resources. Thus, for example, Soviet participants, conscious of the lack of a legal structure on their side of the border to differentiate between hunting of marine mammals by indigenous

peoples and by commercial interests, followed with great interest discussions of the subsistence laws of the U.S. federal government and the State of Alaska. What they heard was conflict and frustration -- wildlife managers frustrated by their lack of managerial discretion under the current regime and indigenous peoples questioning "how people who do not depend on subsistence hunting and fishing, how they can regulate it, not having the experience themselves." (Charles Degnan, conference proceedings at p. 142)

American participants discussed with some pride the development of the environmental impact assessment process for proposed oil and gas lease sales in the Bering and Chukchi Seas, noting the inclusion of Soviet data in a recent environmental impact statement on the Navarin Basin. But representatives of American environmental organizations challenged the degree to which such information actually affected government decision making, while Soviet scientists and representatives of local governments in the Soviet Far East worried about the possibility of ambitious joint development projects near sensitive, but legally unprotected, areas.

The variety of professional disciplines represented at the conference, the broad array of topics discussed, and the hands-on experience of the majority of participants resulted in numerous suggestions for future initiatives. The ideas ranged from establishment of joint environmental impact assessment analyses to establishment of new institutions such as a standing conference on the Bering Sea Region or an international Beringia Commission. Anyone with a particular environmental interest or viewpoint related to Beringia will find the myriad of recommendations in these conference proceedings to be stimulating and worthwhile.

At the conclusion of the conference, the final speaker from the Soviet Union, Alexander Timoshenko, noted that the conference had defined the areas of cooperation which now need to be addressed in a legal form. In the context of Area XI, the Legal and Administrative Measures working group under the US-USSR Environmental Agreement, this is certainly the immediate challenge. Plans are underway for a second conference to take place in the Soviet Far East in August, 1991. Professor Oleg Kolbasov, Co-chair of Area XI for the USSR, has

proposed focusing the second conference on the juridical aspects of the creation of the US-Soviet Beringian park.

The conference proceedings provide a useful framework for subsequent US-Soviet efforts aimed at addressing specific issues in the Beringia region. Additionally, they reflect a degree of cross-fertilization of knowledge which should incrementally help to address the management of the shared living resources of the Bering Sea with compassion and justice.

Dinah Bear

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CHUKOTKA
ЧУКОТКА





РАЙОН БЕРИНГОВА МОРЯ THE BERING REGION

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INTRODUCTORY REMARKS

DINAH BEAR

*Council on Environmental Quality
Washington, D.C.*

Let me welcome you to the Conference on US-Soviet legal and administrative conservation regimes for Shared Living Resources of the Bering Sea Region. I'm Dinah Bear, General Counsel of the President's Council on Environmental Quality. In that capacity, I serve as the U.S. Co-Chair for the legal group under the US-USSR Environmental Agreement.

This conference is being held under the auspices of that agreement, and it is also being co-sponsored on the U.S. side by the Department of the Interior, the National Oceanic and Atmospheric Administration, the State of Alaska, and the Center for Marine Conservation, which is a non-governmental organization. On the Soviet side, this conference is chaired by Professor Oleg Kolbasov, Deputy Director of the Institute of State and Law of the Academy of Sciences of the USSR.

In the course of planning this conference, I have frequently been asked two particular questions. The first question -- which I might add, has never been posed by someone from Alaska, but rather by folks back in Washington, D.C. -- has been, "Why did you pick the Bering Sea area as a focus for the conference?"

Last Friday, at the Soviet embassy, President George Bush made the following statement:

A true peace takes more than just a laying down of arms. It also requires the reaching out of hands. And you know, Americans and Soviets have often tended to think of our two countries as being on opposite sides of almost everything, including opposite sides of the world. But we share an important northern border and we are in fact next door neighbors across the Bering Sea.

President Bush's remarks certainly set forth one important reason for the focus on the Bering Sea today and over the next 2-1/2 days. Another important reason is the relationship of the Bering Sea region to nature. During the course of this conference, you will hear from several scientists who will explain particular aspects of the Bering Sea ecosystem. As a preview, I would like to quote briefly from Barry Lopez's book Arctic Dreams:

Animals define much of the space one encounters in the Arctic because the land, like the sea, is expansive and there are so few people about. Nowhere is this more apparent than in the northern Bering Sea in the spring. Certain regions of the world, sea straits in particular, funnel the movement of migrating animals. Bering Strait, however, is unique in the way it concentrates life. The arrangement of the land earth masses is such that they come close to meeting only in the North; at Bering Strait, the Chukchi Peninsula of the Eastern Hemisphere, with its birds and animals, nearly touches the Seward Peninsula of the Western Hemisphere, with its birds and animals. Moreover, the North Pacific coasts converge here, bringing together the offshore migrations of whales and pelagic seabirds, the near-shore migrations of seals and walrus, and the coastal migrations of birds like eiders.

The Bering Sea itself concentrates life as well because it is extremely feeding ground for marine mammals. Many of the birds, fish, and sea mammals moving within its borders during the height of migratory activity in the spring and fall are local populations. The nearness of the two continents, the convergence of the coasts, and the size and diversity of local bird populations, in fact, have made the Bering Strait region the very image of a remote paradise for bird watchers and observers of marine mammals.

The second question I have been asked about this conference relates to the professional representation of the participants and the underlying nature of these discussions. Or, to be more specific, if this is a legal conference, what are scientists doing on the panel, and if we have scientific specialists on the panels,

why are we cluttering it up with all these lawyers? (I can say that because I am one!). Seriously, the mix of lawyers, policy-makers, scientists and other specialists, including an economist -- has caused a certain amount of confusion.

That confusion was not deliberate, but the mixture of professional expertise was quite intentional. There has been a tremendous increase in scientific collaboration between the U.S. and the Soviet Union in the scientific field, and specifically in the Bering Sea region over the past few years. There have been joint scientific cruises, field work in Chukotka and Alaska in a variety of disciplines. There has also been some increased communication regarding the indigenous peoples of the north on both sides of the Bering Strait. Last week, the Sixth International Conference on Hunting and Gathering Societies, including U.S. and Soviet Native peoples, took place in this auditorium. And next week, there will be a conference here on Global Change in the Polar Region, again including Soviet representation.

There has not been an equivalent development in the legal community of an exchange regarding ecological law in this region. This kind of expertise needs to be developed to structure a comprehensive and complimentary system of protection and management regimes for shared nature resources. It should be based on a foundation of understanding and appreciation for those resources from the viewpoints of many professions and many peoples; from the Inuit expert in bird migrations; the biologist's understanding of the relationship between caribou and reindeer; the fishermen's knowledge of the sea as well as the lawyer's understanding of the Administrative Procedure Act, the Alaska State Constitution and the National Environmental Policy Act. It is for this reason that we have an extremely rich diversity of expertise and views represented at this conference.

This brings me to my final point. We do indeed have many participants, both speakers and panelists, and virtually all of them are experts in their own fields. In the two and a half short days that we have here, we will not possibly have adequate time for full discussion of all these issues. I'm afraid I'm going to have to be cutting off some of the speakers and panelists so that everyone will have to speak.

I apologize in advance for this and regret that it is impossible to lengthen the time of the meeting. But I would leave you with two final thoughts about that problem or about that opportunity. First, it is important to leave some time for questions and discussions in all of the panels. We have some microphones set up here in front so that if you're in back, you can come down and speak. I would also encourage the informal discussions and questions to continue during the break and during the meal periods. Second, this conference is not the last word on any of these issues; rather, its primary purpose is to lay a foundation for further understanding, exchange of information, and progress in protection and management of our shared living resources of the Bering Sea.

With that, I'd like to turn to Dr. Vera Alexander who has been kind enough to agree to give us an Overview of the Bering Sea Ecosystem from an oceanic point of view.

Dr. Alexander was born in Budapest, Hungary and raised in England. She got her Bachelors and Master of Science Degree at the University of Wisconsin. And she was the first woman to get her Ph.D from the University of Alaska. She was quite successful in that regard and stayed on to become the Dean of School of Fisheries and Ocean Sciences and Director of Institute of Marine Sciences. She's been here in Alaska since 1952.

INTRODUCTION TO THE OCEANOGRAPHY OF THE BERING SEA

VERA ALEXANDER

*Institute of Marine Science/School of Fisheries and Ocean Science
University of Alaska, Fairbanks*

I'm really very pleased to have this opportunity to provide a very brief overview of the Bering Sea. This is the environment about which you are going to be talking for the next few days. It is fitting that you are about to spend a few days discussing the shared living resources of the Bering Sea. The Bering Sea is truly a shared sea; after all, the biological resources do not understand geographic boundaries, and there are no topographical boundaries. There are no real boundaries between the waters of USSR and of the U.S. It is one sea and it functions as one sea in so many ways, that oceanographically you simply cannot divide it by any kind of arbitrary boundaries.

The Bering Sea is one of the most biologically productive waters of the world. We've heard so often how the Antarctic waters abound with life. Nonsense when you compare them in general with the Bering Sea. The Bering Sea has incredibly high production, especially when you consider the highest trophic levels. By "highest trophic levels" I mean the birds, mammals, fishes, and even some of the large invertebrates that live on the bottom. You only have to look at the walrus population in the northern Bering Sea or the pollock stocks in the southeast Bering Sea to recognize this.

However, for many years, we simply did not understand how this could be, because the apparent production of phytoplankton at the base of the food chain, that is the grass of the sea on which everything lives, seems to be far too low to allow this incredibly high biomass at the top. Each year, however, we are gaining new information through a number of studies, some of them cooperatives with the USSR, by the way, which are allowing us to get an increasingly improved understanding of how this system can possibly work, and does in fact work. For one thing, each year, our estimates of the biological primary productivity of the Bering Sea are increasing, and it's obvious that the problem has been inadequate measurement and inadequate observation. This is not surprising, but still it seems to have been the problem.

One of the factors that we are learning is that the biological productivity is not evenly distributed throughout the Bering Sea. You can't go to the Bering Sea in the summer and make measurements and say "this is how productive it is," because you would think it's a desert in many places. So, the productivity is not uniformly distributed, but it depends very much on local hydrological conditions. And that is why my short introduction will emphasize the physical regime, the physical oceanographic behavior of the Bering Sea, because this is the key to why the Bering Sea is productive. It helps us to understand why you can have a cap on the total Bering Sea fisheries take on the order of millions of metric tons. It's an almost inconceivable number to many of us.

In order to understand, then, the biological regime of the Bering Sea, you have to understand something about its physical structure and dynamics. The Bering Sea is divided into two major portions. There is a very large continental shelf region and then there is the Bering Sea Basin, also known as the Aleutian Basin. The width of this is more than 200 kilometers.

The general flow of water in the Bering Sea is northward, passing up through the Bering Strait into the Chukchi Sea and on into the Arctic Ocean. However, over most of the Shelf, it is extremely slow, so that in this part of the Shelf, in fact, the tidal action is more noticeable than is the actual movement of water northward; very, very slow. However, on this side, it's joined up by the Yukon River and moves over to a separate stream of water.

Now, the water flows into the Bering Sea from the North Pacific Ocean through a series of passes through the Aleutians and Komandorskiye Arc. It comes through this particular region, and mainly the biggest inflow is through Near Strait which is somewhere up in here, also here through the Kamchatka Strait. So, this is the main exchange of water with the Gulf of Alaska and the North Pacific. The water that passes through here actually originates along the Alaska Coastal current and moves north. In general that is the overall inflow and outflow to the Bering Sea. And this water movement has a lot to do with the high biological production of the area.

But one of the most dramatic features of the Bering Sea Shelf is that it is divided into a series of broad areas by stationary fronts. These areas are known as "domains." The first is the coastal domain. This area is shallower than 50 meters deep. So, it's a very shallow region. The second is the middle domain, separated by a front at 50 meters. Now, the front that I'm talking about is very similar to an atmospheric front, except that it's in the ocean. It's characterized by great differences in oceanographic properties, primarily salinity, but also including temperature. And what it really means that there is not much mixing between these two regions; that this is actually a separation.

Similiarly, at 100 m you get another separation, another front. And this water is now between 100 m and 200 m deep and has very different properties from the water in the middle. This middle front is a very productive region, but most of the production actually ends up on the bottom rather than in the water column as happens further out to sea where more of the production is actually grazed within the water column.

One other point with these fronts is that, at the fronts, there seems to be increased vertical mixing compared with the regions on either side, which means that increased plant nutrients are brought to the surface. Therefore, these tend to be very productive. So, when you come to one of these fronts, you usually will find larger congregations of birds and other animals. The Pribilof Islands are hot spots in this regard, probably because they coincide with a front as well as because they're islands. And islands per se, of course, are very useful environments for birds.

Just to explain a little further how such fronts work, here is an example of three such regions. If you go into the coastal domain, you will see that the water is shallow, and the water circulates from the top to the bottom, so it's mixed during the summer. If you go in the middle domain, it's too deep for complete mixing. In this region the water near the bottom is subject to tidal mixing, and that near the surface is subject to wind mixing. You have a two-layered system. Two-layered systems are not productive during the summer, because the top layer is sufficiently separated from the bottom so that there are no plant nutrients there during the summer. Therefore you will not get much action. This is why I told

you that there is essentially a desert on the eastern Bering Sea Shelf during the summer.

If you come out further to the deeper waters, then you might have a three or more layered system with three or more different water masses butting each other. So, this essentially is what you see when you look at the Bering Sea, and if you look at temperature it would have a pretty uniform situation in the coastal domain. In the middle domain you'll have maximum temperature on the surface dropping off and going the other way because of fresh water in-flow.

I think this briefly explains how the situation looks. Now, let me tell you one more little story. The first production on the shelf in the Bering Sea takes place as the ice retreats; very, very rich production, but it doesn't last long. It doesn't add a whole lot of material probably. But you can see places during this period when the water appears to be stained brown. This brown is all diatoms. And the diatoms can grow to this extent in the period of about a week. This is an incredibly rapid growth rate at temperatures of -16 degrees celsius, which is the temperature of the sea water when the ice melts.

This provides an early influx of material that we believe is very important to larval forms of many commercial species, especially crabs. Because of the ice, this production bloom starts earlier (this is the so-called spring bloom) than if the ice is not there. So, in a cold year, when the ice extends very far to the south in the Bering Sea, you'll get very high early spring production. You might think this is good, but for pollock at least, it's very bad. Pollock need to spawn on the shelf, and they can't take cold temperatures, so the pollock suffer when the ice extends far south. It's good for the crabs, however, and they do very well, because the crab larvae require this material that's produced early.

This kind of climatic variability is receiving a lot of attention now. And I think it's going to be one of the critical issues in management: how to take into account the perturbations that are provided by natural, and in fact perhaps accelerated, variability of the environment.

Most of this material, by the way, that is produced during this early, spring bloom does tend to go to the bottom. It's produced much too fast for grazing to be effective.

Now, there is one more thing you need to know in order to understand what we know now about the physical regime of the Bering Sea, and that is the broad circulation over the other part of the shelf. If you look at a map of the Bering Sea showing the physical oceanography, you will see that there is a current that goes along the slope of the continent as it drops off into the basin; it moves around and moves north in an accelerated way; it gets perturbed as it goes around capes; and then it moves through the Bering Strait.

This current is incredibly rich in nutrient elements, to the point where it's not fully used, in spite of the fact that the production is very high all summer in all regions intercepted by that particular water. It also has a high particulate matter content because it's producing plankton cells as it moves. So, this very, very rich stream of water contributes a lot of materials to the Chukchi Sea, but also it's responsible for the fact that you can have huge populations of walrus and grey whales, and so on, feeding in this part of the northern Bering Sea. So, this is part of the secret of the richness of the Bering Sea, this slope current that moves north through the Anadyr Strait and then past St. Lawrence. That's a very critical feature of the Bering Sea.

In the northern part of the Bering Sea, the production goes on all summer. It isn't only a spring bloom. The production continues throughout the summer season. Not only are some of the highest plant productions measured anywhere in the world's oceans found there in the Bering Strait region, but also it actually goes on for almost six months of the year, so that in spite of six months of essentially total darkness, it is still one of the most productive places in the world. This is one of the dramatic features of the Bering Sea that has just come to light -- it is actually demonstrated most clearly by a project which was based out of the University of Alaska here. It involved many universities and institutions, as well as other nations.

There's one final benefit to the mammals and the birds of the Bering Sea, which treats these things extremely well and seems to create an almost tailor-made environment for these very large populations of large animals. That is, as the ice forms in the Bering Sea, it is formed in the north, and then is blown to the south by prevailing northeast winds. As the ice forms, it forms against the coastline. But as it's blown away, it leaves areas of open water against the coastline, called "polynias." Polynias are important because they mean that marine mammals and birds can always find access to the sea somewhere in the northern part of the Bering Sea. Now these areas do sometimes freeze over with there's a lack of wind, but it's always very thin ice. It's ice that an animal, such as a whale or walrus or seal can break to get through.

Probably the best known such area of the Bering Sea is the St. Lawrence Island polynia, which is a very important area for marine mammals in winter. But probably also there are other polynia areas that are are equally important, but they are a little bit less known, at least to us. So, these coastal Polynia are another feature, coupled with the ice, which extends the range of walrus over what they could use otherwise.

A number of other things encourage this high production. The shallow shelf, of course, is critical because the animals can dive to the bottom and feed effectively.

Now, as far as the deep basin, we know much less about the Aleutian Basin, which is in the southern part of the Bering Sea. I think this is going to be an area where cooperative scientific research is going to be needed to do an adequate job of covering the area. It's a large area; it takes large ships to successfully and safely carry out research. We know that below 200 meters in that area the water is dominated by North Pacific water which is coming in through the passes and the passages. And above this, there is a variable circulating area with a general cyclonic motion. But beyond this, we don't know much. We don't know the distribution of fishes, of larvae -- of pollock, for example. We don't know their migratory patterns, and so-on-and-so-forth. We need an understanding of the Aleutian Basin area equal to the understanding we are gaining of the shelf and the northern part of the Bering Sea.

This, then, in summary has been a very brief overview of the Bering Sea, which didn't try to provide much insight into the resources themselves, but rather the environment in which they live. And I hope it will form a little bit of framework for the discussions that are to come.

REMARKS BY DINAH BEAR

Thank you very much, Dr. Alexander, for that very comprehensive and concise overview of the Bering Sea ecosystem. That will be very helpful.

The next speaker is Dr. Oleg Kolbasov who is Deputy Director of the Institute of State and Law, of the USSR Academy of Sciences in Moscow. He is the leading Soviet Union authority on environmental law. Under his direction, the Institute's section on ecological law was established and he has been instrumental in the design, drafting, and enactment of the USSR federal air pollution law and federal wildlife law. He has been a specialist in water resources law since the 1960's. He is the author of numerous publications; his book Ecology, Political Institutions and Legislation is cited widely and has been published in both English and Russian. He is the Vice-Chairman of the Environmental Law Commission of the International Union for the Protection of Nature and Natural Resources. Since 1973, he has served as the Soviet Co-Chair for Area II, the group focusing on legal and administrative measures for the protection of the environment under the US/USSR environmental agreement.

DR. OLEG KOLBASOV
Institute of State & Law
Academy of Sciences of the USSR

Thank you very much for your introduction. Of course, my remarks will be devoted to the topic of the conference which is of great interest to all of us. But first of all, please allow me to congratulate all you who are sitting here on the occasion of World Environment Day, which is today. This day was established by the United Nations in 1972 at the Stockholm Convention, when, for the first time, a thorough analysis was made of the global ecological situation. As you're aware, it will soon be 20 years since this conference was held and the UN, in this time, has made a decision -- made a resolution that in 1992 in Brasilia there will be a similar international conference, which will also give an opportunity for people to assess what has been done over the last 20 years.

I would like to express my heartfelt thanks to the organizers of this conference. I can tell that a lot of preparatory work has been done to make this possible. And thanks to this work, the conference promises to be an interesting and fruitful one. I think that it contributes to US-Soviet cooperation in the environmental field as was embodied in the agreement signed in Moscow between the two countries in 1972. This conference gives this regime of cooperation a more concrete, more specific direction. I'm happy at the direction which our relations are developing. I think we have a chance here to make the situation in the Bering Sea more healthy. This will be very positive, not only for both of our countries, but it will also be a salvation from the perishing of the indigenous peoples of this region. I think that we can hope for success in this area, particularly if we take into account the recent agreement reached in Washington about the establishment of an international park in the region of the Bering Strait. I say that because leaders of both our countries took a very positive approach to US-Soviet cooperation in this specific area.

This conference has 13 specialists as participants from the Soviet side. They are attorneys, biologists, state governmental agency employees, as well as public environmental organizations in the Soviet Union. I should say that we were hoping to have a wider representation of Soviet society in this conference, but the

situation was such that we were not able to do this; we were not able to include several colleagues of ours who were very involved, I would say, in the political process that is now unfolding in the Soviet Union, which has a very acute nature right now. As you know, in the spring of this year, we had parliamentary elections, both in the Union Republics as well as in the local areas, including Borough elections. And the people of our country were politically very active. It is very pleasant to see when political awareness and consciousness in a country is blooming before your very eyes.

I would like to note that right now the Soviet Union is going through a very complicated period in its development. Our society is being renewed in such a serious way that has never happened before. The authoritative totalitarian command structure is being changed. Instead of centralized economy from above and the suppression of the people's spiritual life, we are creating a new society where democracy, openness, and justice must reign and where we must make conditions in which people can live in a way that is appropriate to their humanity.

But this process of transformation is very painful. It calls forth lots of battles between conflicting interests, and I would like to say that in this situation, it's important not to lose control over the events that are going on, so that Perestroika does not turn into chaos in our country. Of course, this has a great impact on decision-making in the environmental area. I should say with all candidness that the agencies and our people attach a great deal of importance -- I would say even a priority importance -- to the environmental question.

In reality the situation is not at all favorable. Personally, I would say that the situation is still moving towards the worst. And if we look at a document that was issued by the Supreme Soviet of the USSR about immediate measures for improving the environment in our country -- this document dates from last December -- we can see that the environmental situation in our country is extremely serious and extremely grave. Above all, we consider the most alarming and most dangerous situation to be that in the basin of the Aral Sea. You probably know the sea is deep in the middle of our country, but around it there are people living; quite a number of people. It's a very highly populated area. And at

the present time, as a result of a lack of environmental awareness, we are seeing a catastrophic situation develop. We could say that this is the first area in the Soviet Union which has been officially been called an ecological disaster zone.

We have to, of course, decide what we're going to do in this area. I think that we still do not yet have a clear concept of how to take this region out of its disastrous state and change the situation. Many scientists, public leaders, and government agencies are working on the problem right now. I should say that the long-term effects of the accident at the Chernobyl power station are being studied. As has been made clear now, a good number of people living in Russia and the Ukraine are suffering from high radiation levels. The unprecedented measures of evacuating the population from these territories have been undertaken, because, as has become clear, in the work of decontaminating the stricken areas the desired results have not been obtained.

I'm speaking of this because this also imposes a very heavy burden; a very heavy weight on our life, on our politics, and on our economy. There are a number of other areas in which the situation is also quite complex. Sometimes we say that these regions are on the edge of environmental disaster. Some of these are in the northern area; in the north of our country. I don't think I'd be telling anything new if I tell you that there is a dangerous environmental situation in the Kola Peninsula in the northern part of the Ural Mountains; in Western Siberia; near the city of Noril'sk; and in seven other areas of the Soviet Union.

All of this says to us that the questions of environmental protection and reasonable use of our resources must be resolved very quickly. But we do not have the means, we do not have the material resources, or the funds; nor do we have enough scientific studies done. We have not nearly enough qualified staff people. And I would say that we still have a very low ecological consciousness on the part of our people.

The people must still be educated in this area. It will probably be many years before they truly, practically understand the exceptional importance of environmental questions in the future of our own country and in the future of the entire world. In this situation, I should say that to try to attract the attention of

the government and the people to the environment in the Bering Sea is something that is quite hard to do, because everytime the question is asked, "Why should we give preference to this area; what should we do first; what should we postpone until later on?"

All the same, we have come to the conclusion that saving the environment in the Bering Sea and outlying regions has outstanding importance, not only because it will serve as a good example to all peoples of the world as to the effects of cooperation between countries, but it will also enable us to save the traditional peoples of the area of the Bering Sea. Of course, for us to resolve this question, we will be guided by the decisions recently taken at the summit meeting.

As for the organizations working to preserve the environment in the Bering Sea, some have a legal basis. But I would also say that administrative measures are required in order to organize our work and our progress in as short a period as possible. As for the legal basis, I think you're all aware that we do have a historical establishment. How scientific and how ecologically determined will the standards and norms that we use be? How adequately will the administrative system will be constructed? We will be much more successful if we take into consideration right at the beginning the development of an environmental consciousness in all laws which have to do with the use of nature, of the environment, and of production activities and industrial activities in these areas.

At the present time, as far as I know, there are approximately 120 multilateral international agreements in the area of the environment in the whole world. There are also about 2,000 bilateral agreements which are also in effect that deal with the environment. Not all of them, of course, are relevant to the Bering Sea area. But I would like to point out that there are a number of international conventions which directly or indirectly regulate human activity in this area.

Above all, and this was a long time ago, we were quite alarmed by the pollution in this area. This pollution is caused by ships as well as by coastal areas. As for pollution by ships, this question has been addressed by several conventions. And in 1973 -- on the 2nd of November, 1973 -- a convention was passed that regulates pollution by international shipping. This convention was

preceded by another one that regulated the removal of waste from ships and releasing them into the sea. They cover all parts of shipping in the Bering Sea area. And I think that we will need to be guided by the requirements set forth in these conventions in order to control and regulate shipping, keeping in mind our need to protect the environment.

There is a multilateral convention on protection of fishing and other resources in this area from 1958. In 1960, there was one on international whaling. I'd say this is of particular importance for regulating the whaling industry in this particular region. I would like to recall that the Whaling Commission that was established on the basis of this convention systematically adopted many decisions restricting whaling with the goal of preserving the populations of various species of whales.

But I'd also like to note that, beginning in 1982, there has been what I would call a world-wide, codified convention on the law of the seas, which unfortunately has not yet entered into effect because all the conditions for it to do so have not been met. But this is a convention that took 10 years to prepare, and I believe it reflected all contemporary accomplishments of science and technology and is sort of the last word in human knowledge with respect to these.

In addition to this there are a number of other international documents which are of great importance in regulating the environment and for providing for environmental protection in the region of the Bering Sea. I'd like to note that there is the international convention on wetlands, which is of great importance, particularly for preserving the habitat of water fowl. And in accordance with this convention, all wetlands on continental land masses are protected for waterfowl habitat. There are a great number of species and large populations of waterfowl that have been preserved because of this convention.

Another very important convention is one that was signed in Washington in 1973 about international trade in endangered species of wild flora and fauna. It must be noted that this convention can be a very important legal tool for preserving the unique species of animals and plant life in this area. There is also, and I think this is something that you're aware of as well, an agreement on the preservation of polar bears. This was signed in 1973 in Norway, and I think it has

provided some very positive results. I can't say this definitely, but based on the experience I've had in this area, I know that the population of the polar bears in the Arctic has become stable and has become well established with the help of this international convention, and of course, with the cooperation of the states who are party to this international agreement.

I must also say that there are also several bilateral agreements -- I mean between the US and the Soviet Union -- which relate to this region and are of great importance with respect to it. They are both directly and indirectly related. First of all, there is an agreement on migratory birds who migrate to or from this region. This agreement was signed in 1976 and entered into force in 1978. I can't say how effective it has been or how much it is being enforced. We have no information regarding how strictly the provisions of the conventions are being carried out in this area.

Of course, national legislation plays a great role in the preservation of the environment. In the Soviet Union, of course, there is a very important question. And why is it important? In the environmental protection area our legislation is clearly developed -- I would say it is truly well developed. We have a good set of laws regulating activities in using natural resources and protecting the environment. But what do we not have enough of in order to feel more certain and more comfortable in this area? I think we don't have the mechanisms to implement the legislation. We sometimes even are forced to feel ashamed because, although we do have good legislation, we cannot provide for strict implementation of environmental protection laws in our own country.

There are many reasons for this. There are political ones, economic ones; there's the history of our country. I'd like to point out that in the early years after the Soviet revolution, in 1920, there were many adopted to protect the Chukchi Region and the far north of our country. But starting in the 1930's, when industrialization was going on in the country, when mass collectivization of agriculture was going on, when the command authority system from above was instituted, then events developed for the worse.

Recently we have made substantive changes in the constitution of our country, and I would say that all the rules regulating the structure, activity, and lifestyle of our society are being changed. Much has been done in the spirit of Perestroika to mobilize the political activeness of the people of our country, and to enhance civic responsibility for the quality of life which we have in our country, so that this will be passed on to coming generations.

Something that is very new for us is division of responsibility and authority with local authorities. In the Chukchi National Region, the changes will be substantial. The local authorities will have many more opportunities to organize their own use of natural resources in a reasonable way, taking into account the needs of their own specific communities.

At the same time, we also have legislation (it's also quite well developed) about individual aspects of the environment. What I mean is that people have long since gotten used to perceiving the environment in an undifferentiated way. We see that nature truly is made up of different components. Land is one component; forest is another; vegetation, water, mineral resources, animal life, atmosphere are all different components. And our legislation is also divided into these different categories. I would point out that in both of our countries our laws are adapted to regulating activities connected or related to these different aspects of the environment. We also have laws regulating land use, water use, wildlife, etc. And we will continue to develop these different directions in our legislation, because they do create a positive legislative or legal basis for further work in the area.

But we do need to take a serious look at how to organize the implementation of these laws. Recently, the Supreme Soviet adopted a new law about land ownership. Much was debated and argued about in it. I've been away from home for a while, and I've already started to forget about this law, although I do remember that our legislators did a lot of yelling and shouting at the beginning of the year and said, "Let's introduce these laws before sowing time!" as if the entire harvest would change if they passed this law before it was time to sow their crops.

However, I don't think the changes made were all that revolutionary. Of course, we did expand the possibility of having market relationships, of having private ownership of land. But still in principle, the land belonged to the state, and it still does. Personally, I would have gone farther. I would have allowed private land ownership for families. I would allow people to own their own houses that they live in, both in agricultural regions as well as in small towns. And why not? I think that most countries have this sort of practice. And it is regulated in an appropriate way. This could be done in a way that it did not harm our society nor would it harm the environment.

But there are many different opinions on this view. It's a contentious question, and people continue to argue among themselves. For the time being, the land does belong to the state, but it can be leased; it can be rented. It can be used for the duration of a lifetime. In other words, what we used to have was the concept of eternal use of the land forever. But I think that this concept has now fallen victim to the arbitrary command authority system in our country. The words of eternal land use, land use forever, are now just words.

Perhaps instead of the words "land use" the term "being passed on from family to family" could be more acceptable. But we have to find a way to make sure that we can provide for this kind of use. I think that the land use law as it is being changed and renewed can give us a way to regulate land use and land resources in an environmentally sensitive way. We can talk a lot about this, because we have an enormous country, and we have as many problems as we do have territory.

Moving on to legislation about the environment as a whole: up until now, we primarily have had laws concerning the union republics. Well, the union republics' legislation played a positive role in their day. They have announced their intention to carry out environmental legislation on a broad front. But nevertheless, given the historical circumstances in the hierarchy of our legislation, the all-union legislation has always predominated. These laws, which have decided the nature of natural resource use, have not taken into account local interests and needs. In other words, they simply allow centrally planned ministerial organizations to run their affairs without regard to the impact on the local population and area.

Currently we are working on a piece of legislation at the all-union level -- a piece of legislation that will, in some ways, be reminiscent of the National Environmental Policy Act. This will enable us to create more equal conditions for cooperation between our countries. In any case, I do feel that it will have a positive effect on our cooperation. The legislation is still being worked on. I hope that the bill will be published in our newspaper so that it can be discussed broadly by the public at large. Our task consists of making this legislation as constructive as possible.

Simultaneously, we are working on several other environmental protection packages. First of all, there is the law on protecting wild plants. We have a forestry law, but it does not provide the kind of comprehensive protection for plants that we would like; therefore, we came to the conclusion that such a piece of legislation is necessary and it is being worked on at present. I hope that sooner or later it will be implemented.

We are also preparing a law about specially protected areas: various parks, forests, various preserves. As for this legislation, it will, of course, go into effect with the joint Bering Straits park. There are also a number of special laws which regulate the use of natural resources and environmental protection in a pretty detailed fashion, including degrees of responsibility carried by human beings for resource use. At present, it is difficult to say how effective this legislation might be towards guaranteeing environmental protection and the rational use of natural resources. I think we'll still need to work a bit on this in order to fine-tune these pieces of legislation.

I am unable to talk about this law in more detail, but I can say that we have legislation that keeps in mind both the environmental aspects of it and the organizational aspects, and we have legislation concerning the legal responsibility for these resources. We have various degrees of criminal, administrative, civil, material, and other types of responsibility, as well as disciplinary responsibility. All of this is on the books. Of course, there is some discrepancy between how effective this is in practice and on the books. I hope that, in our future panel discussions, these questions will be discussed in more detail. I hope we'll have an opportunity to hear more about them.

Now, in conclusion, I would like to say that, of course, in the history of the world's peoples, one often sees a situation whereby the sea existing between two states can play different types of roles. It can divide and it can also unite countries. The role of the sea, whether it unites or divides people, will depend on the people. Let's do everything possible to make sure that the Bering Sea unites our countries and people.

BY DINAH BEAR:

Thank you, Dr. Kolbasov for that very candid and comprehensive overview. I might add that Dr. Kolbasov has been a very stalwart supporter of US-Soviet cooperation for the past 20 years, and it's been a great pleasure for me to have the honor to work with him for the past seven years.

Our next speaker has also been a long time participant in US-Soviet environmental cooperation. Professor Nicholas Robinson teaches environmental law at Pace University School of Law at White Plains, New York, where he founded the Center for Environmental Legal Studies and its graduate program in environmental law. He has been General Counsel and Deputy Commissioner of the New York Department of Environmental Conservation, and has chaired that state's fresh water wetlands committee.

He specializes in environmental impact assessment procedures, and has written a book on environmental regulation of real property, which has been translated in Russian and published by Progress Publishers, and is the author of several other books and articles. He is also a Vice-Chairman of the IUCN's environmental law commission. And since 1973, he has been a delegate to every session of the Area 11 Environmental Law and Administrative Cooperation Group under the US-USSR bilateral. He has also been very supportive and very helpful throughout the past seven years that I have been working on the environmental exchange.

NICHOLAS ROBINSON
Center for Environmental Legal Studies
Pace University School of Law

We have spent a long time in traveling to come to this meeting. A great distance has been traveled; those from Moscow; those from Magadan those from Washington or Kansas. It's also been a long time in coming to get to this meeting, not just in our travel time. Alaska, after all, was transferred from Russian to the United States in 1867. Yet only last May 23rd, 123 years later, did the United States and the Soviet Union announce a treaty had been agreed to fixing the delineation on the maps of the border between our two countries. And Presidents Gorbachev and Bush signed an agreement to that effect at the summit meeting.

We've come a long time and a long distance to come to this meeting in learning about this area, not just in figuring out where the maps are. Of course, indigenous people always knew where they were. It was us from other places that had to discover it. Not long ago in the history of our nations, Czar Peter the Great was very curious about where this area was. At the time of his leadership, the French geographer, Guillome de Leo, had a map of Siberia. It was called Tartary. Then (in 1706) the map sort of disappeared as it got to this part of the world, with a label: "It is not known where this chain of mountain ends, or whether or not it meets another continent." Czar Peter, in 1725, gave the following written instructions in his own hand. He wrote his minister, as admiral of the fleet, to see where this coast joins America, and whether a town belonging to Europe is not to be found. Peter personally chose to dispatch Bering to go to Kamchatka and build two ships to explore this area.

And after all these years, we have the map. And yet, as our excellent introductory lecturer indicated, we are still not very knowledgeable about the natural systems of this region; about what takes place within these mapped lands and waters; about the ecology of the area; and how the ecology relates to the global climate; how the coastal and aquatic resources, the upland areas, relate to the different regions of the sea. In fact, our conceptualization of this region as a region itself, is relatively young. The term "Beringia" has only been used since 1937 in Eric Hultun's, The Outline of the History of the Arctic and Boreobiota During the Quaternary Period.

Long ago, of course, developers from Europe, and from Russia, and from the lower part of North America discovered the natural wealth of this area. But only recently are we discovering how valuable this region may be to the biosphere as a whole. In this regard, let me quote the words of Valentine Gregorovich Rasputin in his essay, "The Real Siberia." Rasputin, as you know, is the Russian author whom Mikhail Sergievich Gorbachev chose to be one of the ten members of the Presidential Council under the revised constitution.* And this is what Rasputin wrote:

This land has had a great deal to offer in every century, something which has been obvious from the first rumors of it to reach the European part of Russia, all the way to the latest scientific and economic documentation of the region's most incomprehensible potential. But particularly now, when the earth is literally beginning to suffocate from a lack of fresh air, it is turning to the vast virgin forest of Siberia as the lungs of the planet. Clearly in the next thirty to fifty years, Siberia will truly become a healing force, and perhaps a saving grace for the entire globe.

At a time when many North Americans are looking at the tropical rain forests as one set of the world's lungs, we should remember that the great temperate forests around the world deserve attention as well. As the sea level rises, as potential climate change affects our natural systems, the role of this vast land from Kamchatka to Alaska, and all around the North Pole's circumference, will become an increasingly important region.

We have also traveled a great intellectual distance to arrive at this conference. We come from our own individual disciplines and their specializations, and their special language and jargon and concepts. And we meet together in an interdisciplinary conference. Our work on the Bering Sea Region has, it seems to me, been all too often conducted in isolation of each other. And yet, environmental law has no role without the environmental sciences. The teachings of environmental science will not be observed by either Soviet or American society without the rule of law. Environmental law will be key to whether we can manage the living resources of the Bering Sea area.

* Rasputin has celebrated the Russian village, especially the rural Siberian life. Unfortunately, his views also embrace anti-semitic attitudes which in their inhumanity are inconsistent with his nature writings. See "Yearning for an Iron Hand", New York Times Magazine, January 28, 1990, p. 18, p.48.

The Bering Land Bridge International Park will need every scientific and professional discipline to support its creation and to make it a reality. And it will require the support of political leaders and diplomats if it is to be a success. All that was done in Washington was an agreement by our two presidents that we should finish the negotiations to create this park. The detailed work lies ahead of us.

The US and the Soviet Union in their 1972 agreement on Cooperation in the Field of Environmental Protection have now developed over 14 substantive projects of bilateral work. Our Area 11 on law and administration is one of these. And yet, most of these 14 projects have proceeded just like our scientific disciplines in entire isolation of each other. They're managed by the same joint secretariat, and yet there has been no attempt to weave their lessons into an interdisciplinary fabric, which will be stronger for that sharing.

We are grateful for the leadership of the National Park Service. I recall -- I was rather younger then -- 20 years ago when the National Park Service first proposed the international park across the Bering Strait. It was proposed for the Nixon-Brezhnev Summit meeting in 1972. It was not put on the table for action, at that time, although through the continued leadership of the National Park Service in Area 2 of the same bilateral agreement, discussions for such a park continued quietly over the intervening two decades among the specialists. And Dennis Galvin who unfortunately could not be with us at this conference, and others and his Soviet counterparts have moved our two nations toward making this park a reality. As President Bush said in Washington at the Summit meeting:

A new gateway to the future. It will be necessary, if we're going to achieve more successes like this park, and even to realize this park, that all of the interdisciplinary work under this bi-lateral agreement come together. And in the Bering Sea we have the first opportunity to make that interdisciplinary work a reality because we have the practical focus on one geographic region.

We have also come a very long distance to this meeting today from the period of poor cooperation between our countries. In 1945, we were allies in the victory of the Second World War. And in that year, an American author of a rather forgotten book, Daniel Henderson, wrote a text called, From the Volga to the

Yukon. He told the story of the parallel marches of the Russians toward the east to Alaska and of the United States towards the west and the Pacific, meeting again in Alaska. And in the closing of this book published in 1945, these were his words. I think we might remember them at the opening of our meeting because many people in this period of the almost-over "Cold War", may still have this mind set. This 1945 book ended with these words:

In the light of this age of air and radio, it will be seen that the Russian march to the Pacific has made her a mighty Great Circle neighbor of the United States. The bridge of friendship we have built as war allies must stand the test of strange language, the mystery of the Asiatic element in her blood, the secrecy of her leaders, and the present Russian policy of not informing the people as to the real nature of life in the United States and the virtues that have made it possible to be the happiest, freest, and most generous people on earth, for the purpose to settle future Russian/American problems of land, sea, or air by open conferences and scrupulously held covenant.

From this "Cold War" perspective which we are putting behind us now, we meet here in a open conference. The work that could have been begun in 1945 is only just now being begun. Thanks to Perestroika and the Disarmament Agreements, we are in a different world, and we are, and can act now, as Henderson suggested, as Circumpolar Neighbors. Our role in the next two days in this conference is to examine the legal institutions and the scientific knowledge necessary to protect the environment of Beringia.

The rule of law tells us a great deal about how neighbors are to behave. International law provides that neighbors are to cooperate together and equitably or fairly share natural resources, which they hold in common. At the 1972 Stockholm Conference on the Human Environment, ratified by General Assembly Resolution, the Stockholm Declaration was adopted, which provides in Principle 21 that as states exercise their sovereign rights to exploit and develop natural resources, every state has the duty to assure that none of its actions will injure the interest of another nation. This Principle 21 is universally accepted as law. It reflects a very old concept of neighborly relations. It is the golden rule, if you will, written into a code of law. "Do unto others as you would have them do unto you."

And we recognize this in international documents. The Trail Smelter Arbitration between the United States and Canada on Trans-boundary Air Pollution

was premised on this principle. The International Court of Justice has acknowledged it in the Corfu Channel case.

Well, how are we, these two nations, the US and the Soviet Union, to exercise our duties under international law to be good neighbors with one another? Well, we have some common heritage of similar behavior in this regard. Again, let me quote Valentine Rasputin, who speaks of life in 19th Century Siberia as one of great self-reliance where the people had to depend upon themselves. This is what Rasputin writes:

There was plenty of land for the taking. Anyone could farm as much of it as he was able. Administrative hassles were minimal outside the cities, for rules and regulations were weakened considerably by the time they filtered down to the villages. Insipid regulations, that the experienced farmer was in no hurry to carry out, were almost ineffective. Everyone took quite literally the old Russian saying, "God helps those who help themselves." For it was applied directly and most practically in Siberia.

We must today all help ourselves in this region of Beringia. Those of us that care about Soviet-US cooperation must help to bring about a better interdisciplinary pattern of cooperation on the problems of Beringia. We must structure new governing systems to foster ecologically sound development, and development will of course take place.

The patterns of the economic reform and decentralization of political decision making, which Professor Kolbasov has so ably described, will stimulate a great deal of development in the Magadan Oblast and our neighboring areas. If we care about the ecological quality of this development and its impact across the border, we must cooperate to see that it proceeds on an economic and ecologically sustainable basis.

We cannot rely on Washington and Moscow to maintain a high priority of interest in this area which is so distant from those two capitals. Alaskans know many instances of Washington's, perhaps, insensitivity to the problems of this region. Let me give you one small example I came across from the Soviet side.

I was much struck by a speech that Mikhail Sergioyevich Gorbachev gave in 1985. It was entitled "Accelerating the Development of Siberia". He gave it at a

conference of Party and Managerial Activists in the Tyumen Oblast region of Western Siberia. Much of the address is a plea for more effective oil and gas extraction, or volume of extraction. He wanted to accelerate and expand the productive forces of Siberia and the Soviet Far East. And he said, "The expansion of the Soviet Far East is very important for the total prosperity of the Soviet economy." He observed that much work would have to be done to realize what the plan for the year 2000 set forth as an objective: that there will be a two-fold increase in the volume of construction in Siberia.

After this very lengthy address, which in the written form goes on for many pages, almost as an afterthought, there was one short paragraph. Just before his closing few words he said, as follows, and I quote:

And now a few words about one more issue directly relating to making Siberia an area where life will be enjoyable -- I mean, the necessity of showing a true concern for nature. In Siberia, we must act as good proprietors and must not only pursue immediate benefits, but also work for preserving the riches and beauty of Siberia for the coming generations.

This is a noble sentiment that we all share. Every family believes in the protection of nature. And yet, too often we do it too late, and often only as an afterthought. It seems to me the development of Siberia or Alaska cannot be sustainable if the environmental protection is an afterthought. Rather we must address how to fully integrate environmental protection into our development plans and into all our projects and programs. This integration has happened in much of the United States because of the environmental laws which Congress has been adopting for the last 20 years.

A good example is the National Environmental Policy Act, which requires the environmental impact assessment process. It's important to note that this NEPA process of environmental impact statement has now been independently adopted by over 65 jurisdictions around the world. Every Canadian province has adopted an EIA process and so has the federal government in Canada. And under a 1988 decree of the Council of Ministers and the Central Committee of the Communist Party, the same decree that created their environmental ministry, *Goskompriroda*, there is to be established a system of environmental impact assessment throughout the Soviet Union.

The principles of environmental impact assessment of course provide that, before an agency takes an action, it must consider the adverse effects of that action on the environment wherever the environment is located, whether in Canada, the United States, or the Soviet Union. NEPA, if you will, embodies the rule of good neighborliness and provides us a practical means to take this rule of international law and apply it in our daily activities. And we can do much perhaps through Area 11, working with all of the other disciplines to find ways to develop joint environmental impact statement procedures for the activity in the Magadan Oblast and in the State of Alaska, in the federal U.S. activity in Beringia and in the Soviet all-union activity in Beringia.

This environmental impact assessment cooperation alone will not be sufficient. We have another distance to travel, and this is the distance between our ad hoc issue-specific management regimes which prevail throughout this region. The list of treaties, which Professor Kolbasov reviewed, is part of our work under Area 11. We have examined some 35 treaties between the U.S. and the Soviet Union which are in effect in the Bering Sea. We have been adding to these treaties. For instance, just in December, we signed an agreement between the United States and the Soviet Union for cooperation on forestry and the protection of woodlands or forest areas between our two countries. Under our bi-lateral agreement, we not only have the migratory bird agreement to protect the habitats, which Professor Kolbasov referred to, but we have the emergency spill response agreement, which has been put in place between our two countries; between the Coast Guard and the Merchant Marines. The protocol was signed by Secretary of State Baker and Foreign Minister Shevardnadze in May of last year in Moscow. But it reflected several years of negotiations between the Coast Guard and the Merchant Marines. It was consummated last November by a protocol.

The list of treaties, if I were to go through it -- and I've got all 35 or so here to go through but time doesn't permit it -- shows that we have adopted site-specific regimes for different fish, for different marine mammals, for different migratory species of birds, of course for marine pollution, and increasingly now we add atmospheric pollution to this. The long-distance, trans-frontier pollution is a serious problem in this region with Arctic haze. It's apt to become worse.

Unfortunately, within the Soviet Union, the authorities that are responsible for addressing each of these treaties are as divided as they are in the United States. After the Soviet Environmental Ministry was created, which integrated air pollution monitoring and control along with water pollution and wildlife protection, all in one agency, a turf battle erupted and the air pollution control authorities, at least the monitoring part, was removed from this integrated agency. The forestry ministry was removed from this integrated agency.

Each of these ad hoc agreements for resource management in Beringia adopted over a period of 50 years, ignores the systems approach to understanding the natural resources of this area. I have studied, for instance, the atmospheric studies just in preparation for this meeting, of one of the other areas that worked with the air committee. They had an exploration to study the entire ecosystem of Beringia in 1977. Indeed, they grabbed one of my officials from the State of New York Department of Environmental Conservation to go on this trip. But they seemed not to have involved very many people from the University of Alaska. They seemed not to have involved, for instance, the Institute of Biological Problems of the North, Far Eastern Branch, of the Academy of Sciences of the USSR in Magadan, because the *Goskompriroda* was in Vladivostock, not exactly in the region. This is an example of the lack of coordination; the fact that this ecological data could be assembled by one group of specialists and not widely published or shared throughout the region.

On our side, I will not steal Jay Johnson's thunder, who is with us, but he has done an outstanding article on the problems of the North Pacific halibut fishery in a published book for a conference at which he and I both spoke last year on the legal aspects of sustainable development. We have a difficult time harmonizing our own management of halibut with the other kinds of fish and harvesting practices in this region.

The gill net problem with the salmon is something that is well familiar to you. As you know, under Article 66 of the Law of the Sea Convention, no nation is allowed to take salmon (on the High Seas) without the consent or the agreement of the state of origin of those salmon. And yet the gill net fishing practices of the

Japanese and the Koreans take substantial numbers of salmon with neither the permission of the United States or the Soviet Union. This led to yet another ad hoc agreement between our two nations, one that I celebrate and am pleased with. On May 31, 1988, we adopted an agreement on mutual fisheries relations to cooperate on the high seas enforcement of measures to prevent such illegal behavior by others.

But we have a long way to go before that kind of joint enforcement mechanism can be expanded into an overall ecosystem's approach to enforcement. We have precedents that we can learn from in this regard. The most important, I submit to you, is the Boundary Waters Treaty of 1909 between the U.S. and Canada. The operative phrase of this treaty is simple. It says, "The treaty is to prevent disputes regarding the use of boundary waters and to settle all questions which are now pending between the U.S. and the Dominion of Canada." Over the years under this agreement, the International Joint Commission between these two nations has grown and developed very effectively. It provides a unitary body, not to replace the state authorities or the federal agency authorities, but to begin to work together with them at the provincial and state level, and at the federal level to coordinate their joint endeavors, to make them stronger together than they would be separately.

Most recently, the International Joint Commission has adopted an ecosystems approach to our boundary. They look at the migratory flyways that go as far away as Central America; they look at the pollution. Pesticides from as far away as Florida are found on Isle Royale, a wilderness island in the Great Lakes. We need to develop that kind of a focus. Perhaps we need an umbrella treaty or a framework agreement to begin to integrate all of these (some 35 or more) bilateral agreements into a working relationship. As a part of that bilateral framework umbrella agreement, we could have an international joint secretariat which would be like a telephone switchboard, or a communication splice to bring our disciplines into a working relationship with one another, and to bring our political operations into a working relationship with one another.

There are very strong scientific institutions in the Soviet Union. I'm impressed with the world-class science which this great neighbor has developed.

I'm impressed with the new environmental organizations, which are growing up tremendously all over the Soviet Union. I am impressed with the democratic decision-making procedures, the free elections and the attempt to build consensus in every part of that nation. But as the Soviet Union decentralizes, we have a heavier burden to participate in that democratic process. The Canadians come to Washington and lobby us all the time, and we have been known to do the same in Canada. We know the non-governmental organizations and the professional societies and the labor unions, and the trade associations on both sides of our border. Indeed we frequently are members of some on either side.

There is not consensus, I think, within parts of the Soviet Union about what the Soviet side of the Bering Land Bridge Park should look like. The benefit of our meeting and the summit meeting in Washington is to engage in a shared discussion of what those resource decisions should be so we can both understand how we arrived at the decisions. We can both understand why certain political decisions have to be made, because vested interests steer us in one direction or another.

The turf battle over control amongst the new agencies and the old agencies in the Soviet Union are rather more rigorous than anything we've seen for years in Washington. We are in, as Professor Kolbasov said, "a very complicated period," and therefore, it is especially important that we have extra debates, that we have more seminars, and that we participate as fully as possible in each other's dialogues about our shared resources. Otherwise, we will see some economic development take place in the Soviet Far East, in which the environmental protection measures may be inadequate. And as the environmental community knows in the U.S., the battle to protect Alaska and to reach consensus about resource management and development here seems a perennial one.

We are fortunate that in this context we do have a US-Soviet bilateral agreement that can stimulate, facilitate, foster, make this dialogue take place. Many of us share the hope that it will. The National Park Service, in the foreward to its book of last December or January, the Beringia Heritage Reconnaissance Study, which proposed the park at the time of our joint committee meeting in Washington, D.C., included an interesting quote by Yevgen Yevtushenko from his

work, Divided Twins. And as his quote was the preface to that book, let it be the end of my remarks. Here is what Divided Twins says:

In order to come together, people must see each other even through the walls erected by politics, and understand that beauty is not the exclusive property of politics but the common property of all of the inhabitants of the earth. Nature is a potential means of mutual understanding.

So it will be, or else it will, like Professor Kolbasov's reference to the oceans, divide us. Let law and science unite in the US-USSR to bring a common understanding necessary to manage the resources of Beringia for our future generations.

Thank you.



Workers on a factory trawler shovel fish from the deck into the processing area.
Photo by Harry Upton, Center for Marine Conservation.

PANEL ONE: MANAGEMENT AND CONSERVATION OF FISHERIES RESOURCES IN THE BERING SEA

INTRODUCTION BY DINAH BEAR

This is Panel I, "Management and Conservation of Fisheries Resources in the Bering Sea." The panel will be chaired by James Brooks, the Deputy Director of the Alaska Office of the National Marine Fisheries Service, a nationally known agency in NOAA. Dr. Brooks has been continuously involved in the resource management field for a number of years here at the University of Alaska where he got his degree. He was Commissioner of the Alaska Department of Fish and Game and has been in his current position as Deputy Director of the Alaska office for 10 years. Dr. Brooks will introduce the other members of the panel.

Before we begin that, I'd like to read a joint statement on Bering Sea Fisheries Conservation that resulted from the recent summit. We just received this literally 10 minutes before the close of the last session. So, neither myself or Mr. Brooks have had time to study or get any surrounding material. But it's certainly quite relevant to the discussion that we're about to have. It's two paragraphs, so I will read it verbatim:

In the course of the State visit by the President of the Union of Soviet Socialist Republics to the United States of America, the sides reviewed problems posed by the development of an unregulated multi-national fishery for pollock in the Central Bering Sea. In light of the magnitude of that fishery, which accounts for more than one-third of the total annual catch of pollock in the Bering Sea, the situation is of serious environmental concern. In particular, there is a danger to the stocks from over-fishing. This may result in significant harm to the ecological balance in the Bering Sea and to those US and USSR coast communities where livelihoods depend on the living marine resources of the Bering Sea.

The sides agreed that urgent conservation measures should be taken with regard to this unregulated fishery. The sides noted that, in accordance with international law as reflected in the relevant provisions of the 1982 United Nations Convention on the Law of this Sea, all concerned states, including coastal states and fishing states, should cooperate to insure the conservation of these living resources. To this end, both sides noted that they would welcome cooperative efforts toward the development of an international regime for the conservation and management of the living marine resources in the Central Bering Sea.

With that, I'll turn the panel over to Dr. Brooks.

JAMES BROOKS

*Deputy Director, Alaska Office
National Marine Fisheries Service
National Oceanic and Atmospheric Administration (NOAA)*

Thank you, Dinah. I should also thank Dr. Alexander for the very fine overview of the Bering Sea that she presented earlier. It makes my task a little bit easier. I had intended to say a few words on the oceanography of the Bering Sea, and I will be able to shorten that part up.

I should point out though that, from the viewpoint of ecologists and fishery scientists, our scientific knowledge of the Bering Sea Ecosystem is still fairly rudimentary. We have not been able to utilize a systems approach to fishery management. We're doing some ecosystem modeling at the National Marine Fisheries Service, Alaska Fisheries Science Laboratory, but the results of this modeling have not yet been translated into fishery management decisions to any great extent.

We are managing the Bering Sea Fisheries pretty much on a species basis, without really knowing what effects the exploitation of one species may have on other species or other species conflicts. But science in its more basic form at least is not the purpose of this gathering, rather the conference deals with our uses of the Bering Sea and its resources. The fisheries resources and marine mammals of the Bering Sea have long sustained human populations, giving rise to unique cultures among the aboriginal people. This resource dependence is still strong in Western Alaska and to varying degrees it influences regulatory regimes that govern our commercial fisheries today.

The salmon resources of the Bering Sea, with minor exceptions, have been totally utilized since the turn of the century. Ground fish and shell fish resources, on the other hand, have only been developed since about 1950. From the late 1950's, and for about 20 years, Japan, the Soviet Union, and later Korea and Poland sent distant water fishing fleets to the Bering Sea.

During this period, there were few, if any, legal constraints on such fisheries when they took place beyond the territorial seas of the United States or the Soviet Union. The living marine resources were the common property of all states, the consequence of which -- with no one party able to effectively regulate the fishing of the other party -- was a race for the resources. Japan developed gill net fisheries that targeted on salmon resources of both North American and Asian origin and on herring resources that spawned adjacent to both continents. The crab resources as well were exploited heavily by Japan. The Soviet Union also sent distant water fleets into Bering Sea and the Gulf of Alaska. It was evident to all parties that rapid depletion of the fishery resources of the Bering Sea and the Gulf of Alaska was inevitable and fast approaching.

By the mid 1970's, the rockfish and Pacific Ocean perch stock had been reduced to a small fraction of their pristine levels, sable fish had been very much depressed, and halibut had been taken, not as a target fishery by foreign fleets, but as incidental by-catch. And their health was jeopardized certainly to the point where commercial catches by American fishermen were reduced to very low levels.

Recognition that the Japanese high sea salmon fisheries were taking a toll of North American salmon resulted in strong pressures for the U.S. to reach some kind of agreement with Japan that would constrain those high seas fisheries. And in 1952, with Canada, we were able to negotiate a convention that did result in some constraints by the Japanese. They agreed to fish only west of a line that was assumed to separate North American from Asian stock. They also agreed to not harvest halibut. So, some progress was made, even though we had, at that time, no legal authority to force the Japanese to comply with our conservation recommendations.

In the early 1960's, the United States Congress passed an act which asserted U.S. jurisdiction over creatures of the Continental Shelf. With that, we were able to move forward with both the Soviets and the Japanese and negotiate bilateral arrangements to control the harvest of crabs. Then in 1976, the U.S. Government passed the Fisheries Conservation and Management Act, now termed the Magnuson Fisheries Conservation and Management Act, that asserted jurisdiction out to 200 miles. The result has been to force all foreign fishing out of the U.S. exclusive

economic zone, except for certain limited joint ventures with other countries that provide U.S. fishermen a market for their fish at sea.

The withdrawal of the foreign fleets from the EEZ, of both U.S. and Soviet Union, has not displaced foreign fishing from the entire Bering Sea, because of the donut hole, the area of the high seas, that Dinah Bear referred to a few minutes ago. One or more of our panelists will probably address this further.

Before introducing the panel members, let me conclude by pointing out that exploitation of fishery resources is driven by economic forces. In the U.S. fisheries, free enterprise and the common property character of these resources has stimulated fierce competition. We now have domestic catching and processing capacity in excess of what is needed to fully exploit our fishery resources. We have allocation disputes, particularly between on-shore and off-shore sectors of the industry. Because of by-catch problems, that is the non-selectivity of fishing gear that takes a variety of fish, we have allocation disputes between different elements of our fishing industry.

Fortunately, the economic forces driving our fisheries are constrained by legal requirements that assure appropriate conservation safeguards. These are set out as national standards in the Magnuson Act. They also are constrained by a fairly democratic regulatory system involving the North Pacific Fishery Management Council, that helps to resolve these allocation disputes.

I would like to introduce the panel members. First, Dave Benton, the Office of the Commissioner, Alaska Department of Fish and Game; Dr. Clarence G. Pautzke, Executive Director of the North Pacific Fishery and Management Council; Dr. Richard Marasco, Director of Resource Assessment and Fisheries Management Division at the Alaska Fisheries Science Center; Grigoriy Kovalyev of Goskimpriroda; Mr. Jay Johnson, Deputy General Counsel for NOAA; Mr. Herbert Larkins, Executive Director of the Alaska Factory Trawlers Association, formerly Regional Director, Northwest Region for the National Marine Fisheries Service, and prior to that, he has many years as a scientist with the Northwest Alaska Fisheries Center and has a number of books, and many publications, mainly relating to fishery resource modeling exercises. With that, I would like to introduce Jay Johnson.

JAY JOHNSON

***Deputy General Counsel
National Oceanic and Atmospheric Administration***

Thank you very much. One thing I would like to say is, "Welcome" to our Soviet colleagues. Though I haven't met any of them before, I've had the good pleasure of working with a number of their associates on the various fisheries treaties and negotiations we've had with the Soviet Union over the last two years. And I've had two pleasant trips to Moscow and enjoyed the hospitality when I was over there.

I was interested in Dr. Alexander's remarks, at the start of the program, about how the Bering Sea is a single ecosystem and the resources that are in there do not respect any lines that men may draw on maps to try and separate their endeavors. I thought you'd like to see the most recent depiction of what happens when lawyers get involved. And I have a view graph I'd like to show here.

This is a map depicting the recent settlement of the maritime boundary between the United States and the Soviet Union. You might say it's difficult enough drawing lines across bodies of water; when lawyers are involved, they can't even draw straight lines. The boundary dispute basically started out with the Treaty of 1867 between the Russian Empire and the United States in which two points were fixed: one between or near the Diomed Islands and one down past the Near Islands and the Commander Islands. And basically straight lines were drawn between them.

Of course, in 1867, the purpose of that line was to separate the land masses that would belong to the United States from the land masses that would belong to the Russian Empire after 1867. We were quite interested in who owned what islands because most of the islands in the Aleutian Chain and the Commander Islands had very productive marine mammal resources. It was considered by the United States that these were perhaps the most valuable resources in all of Alaska and well worth the price that we paid to the Russian Empire to acquire Alaska.

No one could have foreseen at that point just how those lines would be drawn by cartographers or indeed how cartography would change over the years. But subsequent to 1976, when both the U.S. and Soviet Union extended their fisheries jurisdiction to 200 miles, exactly where this line would be placed on the map became rather important. Not only did the various cartographic methods of depicting it influence which fishery resource would accrue to which country, but also which mineral resources on the Continental Shelf.

The dispute basically stemmed from the United States insisting upon the line connecting the two end points being drawn as an arc of a great circle, and the Soviets insisting on the line being drawn as a rhumb line. I don't exactly know the difference myself, but it resulted in depictions of the boundary that vary only a little at the two ends but by a great deal in the middle. Until we were able to settle the boundary, we had reached an agreement that fishermen could operate in the disputed area, subject to the regulations of their own country until the boundary was settled. Fortunately, there wasn't any immediate interest in developing the seabed resources. So, we were able to work out the settlement.

Most of the settlement reflects an equidistant line between the U.S. claim and the Soviet claim. The little indentation in the center reflects the U.S. agreement to accede to the Soviet claim in that area, and in exchange for that, the U.S. was ceded the right to manage resources that were actually beyond the U.S. 200 mile zone, but within 200-miles of the Soviet Union. Those are depicted on this map as Eastern Special Areas. There is one area that is to the west of the new boundary, which is within 200 miles of the U.S. coast, but more than 200 miles from the Soviet coast. That's called the Western Special Area. In that area, the Soviets will exercise fishery management and continental shelf jurisdiction against the rest of the world in that area. The treaty is subject to ratification, which means that our Senate will have to approve it and presumably the Soviet Congress will have to do so as well.

Not knowing that this agreement would be signed last Friday, I hadn't developed any remarks on it. It was still uncertain in the closing days whether it would be successfully concluded. The purpose of my remarks, however, is to lay out for you the United States' laws with respect to managing fishery resources:

what those laws are, what institutions we have, and how they interact. I'm assuming that probably 80 percent of the audience knows little, if anything, about fisheries management from the legal side.

Let me start out by saying that one of the principal features and something that we live with everyday in the United States, is that we have two levels of government to contend with. We have the states, which have traditionally managed fisheries in the U.S. since the time of our country's founding, and we have the federal government which has been a rather recent entrant into the business, getting involved mainly from international responsibilities and really becoming involved in 1976, when we established the 200-mile limit.

Both the state and the federal systems, particularly here in Alaska, have a lot of common features. I think, as you in the Soviet Union develop the fishery regulations which would be necessary to manage the fishing institutions that operate in a decentralized economy, you may want to incorporate some of the features that the United States laws have. First of all, and I don't think this is an exception with respect to the Soviet Union, there is an extensive amount of scientific information that is used to establish the management programs. That is as it should be and, hopefully the scientific data will only get better as we go along.

The other feature, however, is that we have an extensive public participation program in the United States. This is necessary because we're not just managing the fish; we're managing the people who take them and use them. And it becomes very important to be able to understand how a particular regulation will affect the economic enterprises that are dependent upon it. Consequently, we have devised a variety of systems in order to find out what the fishermen think about our regulations and how they could be adjusted to make more economic sense in light of the biological options that are available.

Ultimately, the decision to issue a regulation, and its contents, is a political decision that must balance the scientific information with the economic, and indeed the social information that we gather from the fishermen and the communities that are dependent upon them.

If the government entities are in error -- if they do something improper -- the regulations are often challenged in our legal system by filing a lawsuit against the government entity that issued the regulation. Ultimately, a court will decide if the agency was empowered to issue the regulation that it did. We have a cooperative system of enforcement that is very strong in Alaska, less strong in some of the other states, by which the federal government and state government share responsibility for enforcing each others' regulations. We only have a limited number of enforcement officers, and it's necessary that we coordinate our efforts in order to make the best use of them.

Ultimately, if a fisherman is found to have violated a regulation, he must pay some penalty. Usually that will be a monetary fine. Less frequently, it may be a suspension or a revocation of his license to be a fisherman. In rare instances where an offense is extremely serious, he may be subjected to incarceration.

The regulations themselves take basically two forms. They are either a restriction on the operation of a fishing vessel -- where and when it can fish, what gear it can use, what it must do with its catch -- or they're some form of limiting the number of fishermen themselves. Sometimes it's a combination. We refer to the systems that limit the numbers of fishermen as limited access or limited entry systems, the theory being that if there are fewer fishermen it is easier for the government to insure that the resource will not be over-harvested.

I pointed out that we share responsibility between the state governments and the federal government. I'd like to outline for you how that has come about. Under our law, the states have complete jurisdiction over fisheries regulations within the state boundaries. Most of the states of the United States have a three-nautical-mile maritime boundary. This means that a fisherman fishing inside of three miles off the coast of Alaska will be regulated by the Alaska fishery regulations system. Fishermen fishing beyond three miles will more likely be regulated by the federal government, although the states do have authority to regulate their own residents operating more than three miles from shore, so long as those state regulations do not conflict with federal laws and regulations.

The Alaskan salmon fishery and the Alaskan herring fisheries are both extensively regulated by the state, even though some components of the fishery occasionally may take place beyond the three mile limit. I mentioned that we use a process of public participation to help design the regulations. In Alaska, that public input comes through a board of fisheries, which is a group of individuals who have been appointed by the governor of this state to look out for the fishery resource and the fishing industry within the state. The Board of Fisheries holds meetings, invites members of the public to come before it and tell them what kind of regulations they think are necessary, and what kind of regulations should be done away with. I'm told it's quite an exciting event when the Alaska Board of Fisheries has its annual meeting.

The Board is basically there to set policy for the forthcoming year. Obviously, it is impractical to have a board of citizens manage a fishery throughout the year, and for that reason, the implementation of the board's policy is handled by the Alaska Department of Fish and Game. These are the people that actually issue the orders opening closing seasons and establishing other regulations to carry out the Board's policy. The state also has an important function in advising the federal government on its management responsibilities and on its international measures. In fact, Alaska in particular has been extremely active in the federal government's international fishery regulation effort.

I'm going to turn now to the federal government and how that system is set up. As Jim Brooks mentioned, the Magnusson Fishery Conservation and Management Act established the 200-mile exclusive economic zone of the United States. Within that zone, the federal government regulates all foreign and most domestic fishing. We also regulate fishing for creatures of the Continental Shelf that are found beyond the 200-mile limit, and for anadromous species -- for salmon and steelhead trout -- when they are beyond the exclusive economic zone.

The public participation in the design of the federal fishery regulations comes through the Regional Fishery Management Councils. Dr. Pautzke is the executive director of the North Pacific Fishery Management Council, which is headquartered in Anchorage, and has responsibility for establishing national fishery management policy with respect to the 200-mile zone off of Alaska. The Council is not

exclusively an Alaskan enterprise. As the name implies, it's a regional body and there are representatives from the states of Washington and Oregon who also serve on the North Pacific Council.

The Council itself composed of the principal state fishery management officials from of the states of Alaska, Oregon, and Washington, our regional director for the National Marine Fisheries Service, seven public citizens, five of whom have been appointed from Alaska and two from Washington State. Then, there are four non-voting members of the Council who represent other federal interests: one member from the State Department, one member from the U.S. Fish and Wildlife Service, one member from the U.S. Coast Guard; and one member who represents an interstate compact, which is an organization that was created by the four Pacific Coast states.

It's the Council's responsibility to develop a plan for each fishery under its jurisdiction for which federal management is required. These plans are submitted to the Secretary of Commerce, and if they are judged by the Secretary of Commerce to be in compliance with the Council's statutory authority, they are then approved, and regulations are issued to implement the plans. The regulations are implemented by the National Marine Fisheries Service. The regulations are then enforced by the National Marine Fisheries Service, by the U.S. Coast Guard, and by any state agencies with whom we have cooperative enforcement agreements. We have one with the State of Alaska.

Just like the state regulations could be challenged in state court as being in violation of the law, the federal regulations can be challenged in federal court. And I think this season we had at least three lawsuits filed against regulations that we had issued here in Alaska. If a fisherman is found guilty of violating one of these regulations, my agency proposes a monetary penalty or a permit revocation for suspension in order to deter future violations. Again, the level of those penalties can be challenged in court as being excessive or inappropriate or somehow otherwise unwarranted.

The major effort of the North Pacific Council and the National Marine Fisheries Service in the Alaska Region has been to manage the tremendous Alaska

groundfish fishery. This is the Number 1 fishery in the Bering Sea in terms of volume, and only recently has it been converted to a domestic fishery. In 1976, this fishery was heavily exploited, as Jim Brooks mentioned, by the Japanese and the Koreans. We have been successful in replacing that foreign effort with new U.S. industry that has become quite dependent upon those stocks. The Council's been doing an excellent job in maintaining a strong conservation program in the face of incredible economic pressure to allow the harvest to increase. The scientists are now, I think, convinced that these conservation measures will be necessary indefinitely if we are going to be able to continue to use these resources.

The other aspect that the federal government is involved in besides direct management of the fishermen themselves is in negotiating agreements with neighboring countries and with distant-water fleets that fish our resources. The most successful of our recent efforts has been the bilateral mutual agreement on mutual fisheries relations between the U.S. and the USSR that was signed in May of 1988. This is the one and only international fisheries agreement that the U.S. has that recognizes a principal of reciprocity. The level of fishing or processing that we allow Soviet vessels to engage in in the U.S. waters will equal the level that we are allowed to engage in in Soviet waters. This is a very good agreement, and is an excellent model for how two countries can harmoniously manage to have successful fishing industries on a side-by-side basis.

The agreement with the Soviet Union also is a continuing relationship as it provides for annual consultations. Dave Benton will explain a little bit about what the last round of consultations resulted in, in his talk.

The United States also has bilateral fisheries relationships with several other countries that either have fished in the Bering Sea or are now fishing in the donut hole, the area in the center that's beyond the 200-mile limit. These agreements are called Governing International Fisheries Agreements. We have them with Japan, the Republic of Korea, the People's Republic of China, and Poland. These agreements are important to the United States because they recognize our jurisdiction over the fishery resources within our 200-mile zone, and most importantly, our jurisdiction over anadromous species beyond the 200-mile zone.

The United States is still a party to an agreement with Canada and Japan with respect to salmon fishing in the North Pacific. This agreement is a parallel agreement to one between the Soviet Union and Japan. In fact, in some areas where the U.S. would allow the Japanese to fish for salmon, the Soviet-Japanese agreement prohibits that fishing, and in some areas where the Soviets would allow Japan to take salmon, the United States treaty prohibits that fishing. We have been able, by maintaining a constant dialogue between our two countries, to essentially keep Japan trapped in the middle and on the way out of a high seas salmon fishery.

We are seeking at the present time to replace this tripartite agreement with a four-party agreement by bringing the Soviet Union, Japan, Canada, and the United States into one North Pacific Salmon Treaty, which would then cover the majority of the major salmon stocks in the North Pacific. There is one nation who I don't believe is represented at this conference that still has an interest in the Bering Sea and that's Canada. I mention that because the United States has two treaties with Canada in which Bering Sea resources are affected. One is the Pacific Salmon Treaty, because our Yukon River starts out in Canada. And the stocks that spawn in the Canadian section of the Yukon River ultimately enter the ocean in the Bering Sea. They are indistinguishable at that point from U.S. stocks of salmon, and to the extent we secure any conservation from third party countries in protecting U.S. salmon, we are also protecting Canadian salmon that come out of the Yukon.

We also have a halibut convention with Canada, which at the present time designates a portion of the Bering Sea as a halibut spawning area in which bottom trawling is prohibited. The United States in effect is prohibiting its fishermen from fishing in that area in order to provide halibut to the Canadian West Coast.

The other recent international agreements that we've negotiated are three concerning the high-seas salmon fisheries that are maintained to the south of our EEZ. Last year, we negotiated agreements with Japan, South Korea and Taiwan, by which each of those countries agreed to refrain from fishing in that portion of the North Pacific that would likely have salmon. We have not had total success in enforcing those agreements as evidenced by the latest Soviet seizure of ten vessels that were bearing North Korean markings, but are suspected of being Japanese

vessels. Eighty percent of the crew aboard these supposed North Korean vessels were Japanese citizens. We suspect that this enterprise was merely a charade to get around the agreement that we reached.

In summary, in the United States, there is hierarchy of laws that the fishermen will be subject to. At the top is international law: the treaties that we've negotiated with other countries and our responsibilities to those other countries under the Law of the Sea Convention. Second, there are federal laws; and third, there are state laws. Only when you understand how all three of these interact can you fully appreciate how difficult it is to provide for conservation of our fishery resources.

DR. CLARENCE G. PAUTZKE

*Executive Director
North Pacific Fishery Management Council*

What I want to do for you today is bring you the North Pacific Fisheries Management Council's perspective on the Bering Sea. I have been given several rules here. First, I have to keep my talk to 15 minutes; secondly, if I see a flashing light, I'm supposed to slow down; and third, I can't tell any jokes about lawyers. But I can diverge from remarks, which I will do at the end to talk about the benefits of ad hocism.

Jay Johnson, before me, has noted that the North Pacific Fisheries Management Council manages the fisheries off Alaska in the 200-mile zone. We advise the Secretary of Commerce on that management. I think that the Council is on the front line of decision making. They are the ones that are sitting there in front of the industry and the public making very hard decisions on allocational issues and conservation issues, trying to run a multi-million dollar fishery.

Jay has noted the composition of the Council which has voting members from Washington, Oregon and Alaska, and the federal government, and four non-voting members. We were set up in 1976, and we're the only Council that has just one state under our jurisdiction. All the rest are multi-state in form. As I said, we're on the front line. Our charge is to manage and conserve the fisheries for the benefit of the United States.

There are five major fisheries off Alaska. Their value at the ex-vessel price is \$1.5 billion. Herring fisheries are worth about \$56 million. They're conducted in the coastal areas of Alaska. In the Bering Sea, they're particularly important to Western Alaska. We also have shellfish fisheries, principally crab fisheries worth \$236 million; they occur throughout the Eastern Bering Sea. And we have other very important fisheries. Salmon, the mainstay of the Alaska fisheries, worth over \$700 million. Then we have halibut, which is a long-line fishery, worth \$66 million. Critical areas for that fishery are in the Eastern Bering Sea. Groundfish, the fifth fishery, is a very important one. It's prosecuted throughout the Gulf of Alaska and

throughout the Bering Sea and Aleutians. I will get into some of the numbers on that fishery in a moment.

All five fisheries together contribute 46 percent by weight and 33 percent by value to total U.S. catch. Alaska fisheries provide two percent of the world fish production. And if we were a country up here in Alaska, we'd rank 10th among the fishing nations of the world. All the fisheries, except groundfish, are managed through international commissions and the State of Alaska. That's where the lead in management is. When it comes to groundfish, the North Pacific Fisheries Management Council is primarily responsible. We work very, very closely with the National Marine Fisheries Service and the State of Alaska to manage these fisheries. But we do have the lead.

In the groundfish complex, the Bering Sea and the Gulf of Alaska have several different species and species groups: pollock, cod, soles, flounders, rock fish and sable fish. For pollock the harvest is about 1.4 million metric tons in our own zone. Flatfish comes next, and that has a harvest of about 235,000 tons. Pacific cod has a harvest of 211,000 tons. A lot of the value of groundfish is tied up in sable fish and some of the other species, but still with pollock, whether in value and volume, you're looking at a considerable portion of the fishery.

The resource itself gives us an annual harvest of between 2 million and 3 million metric tons valued at \$400 million to \$500 million on first sale. Mr. Johnson mentioned our management of these resources. They include: seasons, quotas, bi-catch restrictions, full observer coverage, and so on. I might add, getting back to the theme of the environmental quality, that every one of our regulations requires a supplemental environmental impact statement, and environmental assessment or full EIS. So, we go through the whole NEPA (National Environmental Policy Act) review when we do our regulatory proposals.

Our fisheries management is based on the best scientific information available. We have several different layers of review. We have fishery management teams, which are made up of scientists from the agencies. They come together and do the analysis. Their analyses are fully reviewed by a scientific and statistical committee. I'm proud to say that another panelist speaker, Dr. Richard Marasco, is the

chairman of our scientific and statistical committee, and they review all our data and our results.

Our groundfish resource is healthy. Back in 1977 when the act first came in place, we had a 1.7 million metric ton harvest. Now the harvest is up to 2.3 million metric tons. I would even venture to say that our council has the best conservation track record of all the councils in the United States. We certainly have more fish to deal with; we have more fish now than we had 10 years ago. Pollock is a key component, contributing almost 66 percent of the annual groundfish harvest. And they range widely in the Bering Sea, well beyond our 200 mile zone.

A major policy goal of the 1980's for the council and the Magnusson Act, was to displace foreign fisheries outside our zone. The Magnusson Act gave priority first to total U.S. operations, those operations that have fully U.S. caught and fully U.S. processed fish. The second priority was to what were called joint ventures. And this where you had a U.S. catcher boat delivering to a foreign processor. The Soviet Union was very involved in that. The third priority was to direct fishing by foreign vessels.

Let's take a look at what's happened to our fisheries. Way back in the '60's, the Soviet Union and Japan were taking an awful lot of fish off our coast. Even through the mid '80's, just about, the foreign fleets were taking 99 percent of the groundfish being harvested off the Coast of Alaska within the 200 mile zone. Japan accounted for three-quarters of that fish. Korea, the Soviet Union, Poland, and other countries participated as well. Then, in 1978 in November, a Korean vessel matched up with a U.S. trawler. Interestingly, it happened right off of Dutch Harbor. It picked up about 45 metric tons of fish in a couple of days. That was your first U.S. joint venture off Alaska. From there the joint ventures continued to grow. The Soviets were very involved with these. I think that my numbers show about 12 percent was taken by the Soviets. The Japanese, of course, had the major percentage. They took well over half the fish.

The foreign harvest started to plummet from '84 on. The joint ventures were displacing them because of the priorities of the Magnusson Act. Then along came our fully U.S. processing fishery, either shore-based plants or off-shore fleet.

Those continued on an exponential and the joint ventures peaked in 1987 at about 1.4 million metric tons. Now they're headed downhill. The directed fishery by the foreign fleets went out of the Gulf of Alaska in 1987, and out of the Bering Sea in 1988. I doubt they will be back. The joint venture fishery is on the downhill run. It probably will be gone by '92 or '93. It's hard to predict exactly when those fisheries will go.

But where did all the foreign fleets go? They just didn't leave and go home. They headed out into the Central Bering Sea, the unregulated Central Bering Sea outside our 200-mile zone. We call it the donut hole, but I understand that's very difficult to translate into Russian, so I've left it Central Bering Sea, but that's what I'm referring to. Five countries fish the Central Bering Sea: Japan, China, South Korea, Poland, and the Soviet Union. They employ about 120 foreign fishing vessels targeting on pollock. We can see the connection between the foreign fleets heading down in our EEZ and the upsurge in the catch of pollock out in the donut area. That catch, about 1.3 million to 1.4 million metric tons, is more than what we take in our own zone. The Japanese are responsible for about 51 percent of that catch; South Koreans 20 percent; Poland another 18 percent; Soviet Union 10 percent; and People's Republic of China one percent.

The Council has three major concerns with the Central Bering Sea fisheries. First, we have the concern of conservation. For example, pollock migrate from their spawning areas through the Central Bering Sea. And it is on the stocks out there that the foreign fisheries are working. We have conservation problems with that. A lot of the catches are not being reported. We do not get all the discard information, and we feel from the United States' position and a Council position that uncontrolled foreign harvest will threaten long-term conservation of the resource.

A second concern we have is competition with U.S. products. The value of the foreign fishery in the Central Bering Sea is about \$250 million to \$300 million. That product competes directly with pollock product from our own zone. That's both on our own United States markets, and on international markets. A lot of that fish comes right back into the United States. A lot of it's taken over to Europe and it competes there as well.

Third, we've got problems with violations up there. And I'm going to come back to that topic later, because it's a catalyst for public policy. Our Coast Guard has given us information on their sightings in the Central Bering Sea for the time period of June through September. All the foreign vessels are lining up right on the eastern border of the donut hole. We think that there are violators coming within our zone and they're taking our fish. We've got excellent surveillance from our Coast Guard. But we need more Coast Guard surveillance up there. We are worried about violations into our zone, and the use of that Central Bering Sea as a staging area for incursions into our fisheries.

So, what's going to happen for the 1990's? The Council has urged the U.S. State Department to negotiate a ban on fishing outside 200 miles. We'd like a moratorium out there, some kind of international management. We support the efforts of the U.S.-Soviet Intergovernmental Consultative Committee on Fisheries and several other international groups that are getting together; that will be brought together by Mr. Benton later on. It's very, very important though that the Soviet Union and the United States remain partners on this, in resolving these issues. It's a very important aspect of our fisheries relationships out here. And it's been that way for a long time. The U.S.-Soviet joint ventures in the late '70's stimulated a lot of our own fisheries development throughout the '80's. The Soviets have conducted cooperative groundfishery research, and they've given us the data lately. They've done the research out there which has saved us hundreds of thousands of dollars, if not millions, and we also have a free exchange of scientific information. We believe that the Soviet-U.S. cooperation is going to lead to controls on unregulated foreign fishing outside 200 miles.

Now, there were some earlier remarks made about a super organization that would drive public policy in the Bering Sea. This is something that needs to be done to bring the Soviet Union and the U.S. together, and then we can march forward. I've been with the Council for 10 years, and I've seen how policy is made. And it's my belief, even though it was instilled in me in graduate school and college that public policy makers sit down and make long-range plans and everybody marches forward towards those goals, that it's very difficult in the public policy arena to make long-range goals and have them mean anything. I think

things happen more through political crises, crisis management, "ad hocism," if you will.

Let me give you three examples. The Magnusson Act is one. Do you realize that up through 1975, when I was a graduate student listening to Donald McKernan at the Institute of Marine Studies (He was our U.S. Fisheries Ambassador for quite a while, and he was doing a lot for the State Department as far as the 200 miles zone and Law of the Sea), when the Act was signed, because of all the political pressure to get the foreigners out of our zone, he was telling us in class -- and he was good friend of mine and my father's -- that we can't extend our zone to 200 miles. That's not the way to go; we have to work through the Law of the Sea and all that planning that went into that particular thing. And what happened? That act was signed, and the next day he was extolling the virtues of the 200-mile act. Politics got into it, and moved the whole bureaucracy forward because of a crisis.

Crisis Number 2: High Seas Salmon Interception. That didn't start with anybody sitting down and saying, "Gee, we have to set up some long-term goals on how to manage our salmon on the high seas, and so-on." That started with industry, as far as I know. It started with industry from Western Alaska and from Southeast Alaska pushing the right buttons: talking to the Senators, getting the press, making things happen. The Drift Net Act of 1987 wasn't long-range planning. That was a response to a crisis. We've got net marks on our fish; we've got interceptions going on. "We have to do something about it, Mr. Senator. What are you going to do?" And the fire is turned up.

Number 3: Central Bering Sea Fisheries. This little announcement you have today didn't come out of long-range planning by any means. I call 1988 the "Year of the Donut." In January of 1988, I was sitting in my office, and in came two guys from industry. They weren't from any governmental agency. One was Sam Yelly. He has quite a bit of fishing interests in the North Pacific; crab vessels, and so on. Another one was Ted Evans. They came in with their ball caps on. They had just come in from a flight that they had chartered in a small plane that had gone from Anchorage out over the Aleutians. And they came down below the clouds with a video camera and caught seven Japanese trawlers in our zone with their nets in the water.

Now, we had been talking about problems with the foreigners for years. They went and showed that to the press, they showed it to our Council meeting. And I can tell you, the ball started rolling. All of a sudden, the press was filled with, "We've got to get these foreigners that are taking our fish and so-on-and-so-forth." In '88 and '89, everything evolved as far as hand-shaking with the Soviet Union. Thank God we had *glasnost* and *perestroika*, otherwise it might have not gone as far as it has. The State Department all of a sudden got a fire under them and they had to come into gear; they had to start negotiating. They set up an advisory panel. The solution today coming out in these press releases came from crisis management starting in early 1988. And Dave Benton will go into that.

My point is, is you've got all these ad hoc efforts that are driving the system, and are the things that actually move us forward.

DR. RICHARD MARASCO

*Director of Resource Assessment and Fisheries Management Division
Alaska Fisheries Center*

What I'd like to do in my talk is to give you an understanding of how science interacts with the management process; specifically, how scientists supply information to the North Pacific Fisheries Management Council to assist and aid them in their decision-making activities. Before I begin, though, I would like to point out that there are two agencies responsible for developing scientific information for fishery managers. They include the Alaska Fisheries Science Center and also the Alaska Department of Fish and Game. Today all I'm going to do is summarize very briefly for you the activities of the Alaska Fisheries Science Center in support of fishery management.

The Alaska Fisheries Science Center supports management of fishery resources under the jurisdiction of the North Pacific Fishery Management Council by conducting research activities that are directed at, first, estimation of species abundance. The species that we focus our attention on, in addition to groundfish species, that is pollock, Pacific cod, yellow fin sole, the rockfish species, are king and tanner crab. Those are the primary species for which we develop abundance estimates. Second, we evaluate, or attempt to evaluate, the impact of fishery activities on fishery resources. Third, we attempt to evaluate the impact of environmental change on fishery resources.

To estimate species abundance requires an extensive amount of activity. The activities include data collection, and in addition to data collection, we employ analytical techniques that allow us to estimate what's happening with species and species abundance. In order to understand the "why for" of change in the abundance of this particular species, we attempt to come to grips with an understanding of biological processes.

I want to go back to data sources for a minute. We have two major sources of information upon which we base our assessment activities. First, we have an observer program. That is, we place samplers on commercial fishing vessels, both foreign and domestic. These observers collect information on catch and the species

composition of the catch. They collect biological samples: scales and otoliths, which are used for the aging of fish so that we can determine the age composition of the catch. In addition they collect stomachs to allow us to look at predator/prey interactions. A second major data source is groundfish surveys, or resource surveys. We have several different types. One is using trawl gear to sample the fishing grounds. In addition to using trawl gear, we use hydro-acoustics equipment. Both of these techniques allow us to estimate species abundance and in the process of estimating species abundance, we also do biological sampling.

We regularly conduct surveys in the Bering Sea, the Gulf of Alaska, and the West Coast of the U.S. There are several Bering Sea surveys. The first is the annual Bering Sea Survey; the second, a special Pollock Survey. Foreign vessels were used to conduct that survey. Foreign vessels, vessels from the Soviet Union as well as Japan, play a critical and vital role in our assessment of the Bering Sea resources; that is, the U.S. and our foreign colleagues participate jointly in the evaluation of stocks, both on the Eastern Bering Sea Shelf as well as in the Aleutian Basin.

Now for the time-line of our research activity and how the results of those activities feed into the decision-making process. At the beginning of the year, the scientists at the lab begin analyzing the survey data and the fisheries data. These two data bases or data sources are merged. They're both used in an attempt to evaluate the status and condition of fishery resources. Our survey activities commence early in the summer or late in the spring. These survey activities (the results of which will be available for the first time in late summer) will be fed into the status-of-stock analyses which were initiated way back in January. The analyses are updated in light of the most current data available to the scientists. Once the data are analyzed and compared, the results are summarized in a document called the "SAFE Document." The SAFE Document is the Stock Assessment and Fishery Evaluation Report that's supplied annually to the Fishery Management Council. Information contained in that document serves as the basis for the development of catch quotas.

I want to move on to the estimates that we have obtained using several analytical techniques as well as information we obtained from the surveys. When

we estimate abundance, we attempt to use a variety of approaches and techniques to serve as cross-checks. The surveys alone produce biomass estimates. We can also use analytical techniques that use data collected from the fishery. In using data collected from the fishery, we back-calculate or reconstruct year classes.

At this point in time, we've relied primarily upon single species approaches. For example, in estimating the trends in the abundance of pollock from 1979 to 1988, we have a biomass estimate that we obtain using the bottom trawl survey only. We also have an analytical technique that takes the catch data and the age composition of the catch data and reconstructs the biomass and gives us an estimate of the size of the biomass. We have a slight variant on what we call "age structured models," that is, using the age composition of the catch to estimate biomasses. And we have a combination of the bottom trawl and the "mid-water" or hydro-acoustic survey estimate. The hydro-acoustic survey estimate provides us estimates of the abundance of pollack in the mid-water. Bottom abundance estimates are supplied and provided by the bottom trawl survey, we combine the two. When you estimate abundance for pollock, you want to take into account abundance in the total water column.

That gives you an idea of abundance estimates using a variety of techniques and approaches. What the scientists have to do is, in light of the information available to them, decide upon the best estimate for the stock. And they supply that estimate to the Council. It really serves as the starting point of their discussions with respect to how high or how low the catch quota is going to be set for any given year.

In addition to the activities associated with stock assessment, I mentioned we also are concerned about biological processes. And what do I mean by "biological processes"? One of the critical issues right now is the stock structure of pollock in the Bering Sea. Several of our speakers have already hinted at our concern -- when I say "our" I'm using it in a general context to include both Soviet and U.S. scientists -- about the fishing activity occurring in the donut hole. We're concerned about what type of an impact is the donut hole fishery going to have upon pollock fisheries in particular in the EEZ's of both the Soviet Union and the U.S.

At this point in time we don't have a very good handle on the nature of the stock structure of the pollock resource in the Bering Sea. Several hypotheses have been formulated and discussed in international conferences. There's no consensus at this point among the scientists. We're currently involved in an extensive cooperative research undertaking. Participants include the Soviets, U.S., and Japanese scientists.

Another part of our evaluation of biological processes is to refine our understanding of natural mortality; that is, mortality due to disease and predation. For example, we have estimated, for Pacific cod, by size, the percent occupied in the diets of these fish by commercial fish, other fish, commercial crab, and small invertebrates. This information is information that we've obtained during the collection and analysis of the stomachs of Pacific cod. We also collect stomachs of other species caught commercially in the Bering Sea. By the way, we use the observer program to collect those samples for us.

Now, I'd like to move along. As I pointed out, a second item of concern to us is the impact of fisheries on fishery resources. Once again, let's use the example of Bering Sea pollock. We place the numbers of spawners on one axis of a graph and on the other axis, we have the number of recruits; that is the number of young fish coming into the population. Then we plot actual field observations and calculate the best statistical fit we're able to obtain to these data. In the case of pollock, even though the points are scattered quite a bit, it is probably one of the best fits that we've been able to come up with relating the number of spawners to recruitment.

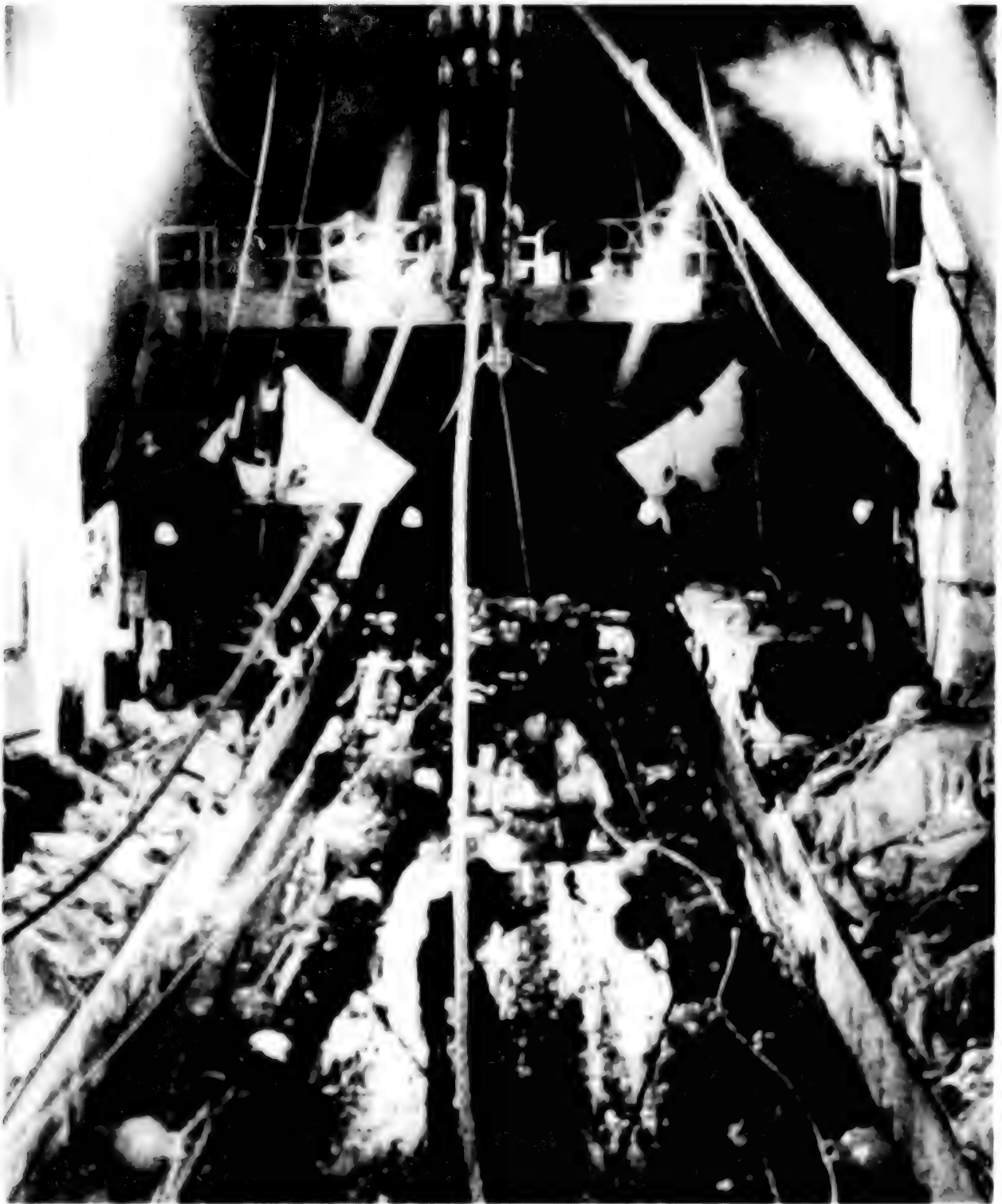
How does the fishery come into account here? The fishery impacts the number of spawners on the grounds. As the number of spawners goes up and down, it impacts recruitment. We're continuously interested in trying to refine our understanding as to the relationship between the number of spawners left out on the grounds in future recruitment.

The process that I've just described of analyzing these data, I refer to a correlation analysis. In addition to just an approach where you look at different

data series and attempt to see if there is any relationship or movement of one data series in conjunction with another, we also use multi-species models where we attempt to take a look at the amount of predation; that is, how much pollock is consumed by pollock or how much pollock is consumed by pea cod. And in the process of using those models, what we can do is come up with some insights. They put the examination of the impact of a fishery in a much broader context. One of the outgrowths of our multi-species modeling activities is a chart that shows you the amount of pollock being removed by the fishery, and how that stacks up relative to the amount removed by marine birds, marine mammals, and marine fish. This is an insight that you don't really get very easily looking at single-species approaches as well as simple correlations.

Last, I want to comment about looking at the environment and how the environment impacts marine resources. I'll skip to the Gulf of Alaska for an example. We've attempted to relate what's called the NEPPI, the Northeast Pacific Pressure Index, with recruitment. The pressure index attempts to characterize the position in the strength of the Aleutian low in any given year. We have been able to determine that 30 percent of the variation in recruitment is accounted for by this NEPPI index. What you like is for that to be as close to 1.0 as possible, however, when you're looking at natural phenomenon, 0.3 is probably not all that bad.

In addition to using these correlation analyses, that is, looking at different time series and looking at how they relate, we've constructed large ecosystem models. We have one that's available for the Eastern Bering Sea. We have used that to examine a variety of phenomena including water temperature anomalies, both positive and negative. We've used that to observe the changes in the abundance of both predator and prey species. We've attempted, in light of our understanding of the physical and biological processes, to bring together all of that information into what we call an ecosystem model and use that model to start looking at how biomasses of fishery resources will be impacted by both environmental phenomenon as well as changes in the level of fishing intensities.



Factory trawler hauling in loaded net at night. Photo by Harry Upton, Center for Marine Conservation.

HERBERT LARKINS
Executive Director
Alaska Factory Trawlers Association

[Note: Due to an operator's error the initial part of this presentation was not recorded and consequently was not transcribed.]

In my long-term planning for preparing this presentation, which began when I got off the airplane today, Jim Brooks said, "Would you please see if we can introduce an element of commerce into this panel?" I'm pleased to do this. In his earlier introduction, Jim mentioned that I spent a long time with the National Marine Fisheries Service, and now I'm with the Factory Trawler Association.

I want to mention for a moment an incarnation I had for the five years between those two jobs. From 1984 through 1989, I was the General Manager of US-USSR Marine Resources Company, which at that time was the only joint venture in any business between the United States and the Soviet Union. It was headquartered in Seattle. It was owned 50 percent by a commercial organization of the Soviet Ministry of Fisheries, and 50 percent by an American capitalistic partner.

The joint venture company was established in recognition of the mandate to Americanize our fisheries. I'm thinking here particularly of the Bering Sea groundfish fisheries that other speakers have explained to you were dominated by foreign interests. This was an interim phase of Americanization in which American catcher boats would deliver their catches at sea, right in the fishing nets, to foreign processing vessels. The company I was with started the first one. They started on the West Coast fishing for hake and then was a large player in the Bering Sea.

As an example of the avenue of commerce the Bering Sea has opened: that's why I wanted to mention this little bit of my background. There are two interesting anecdotes I'd like to mention. The first, as you all know, the ruble was not at that time, and still is not, exchangeable, yet the Soviets wanted particular kinds of fish for their own domestic market, particularly the small flounders and soles. About that same time, the king crab resource in the Eastern Bering Sea had

collapsed for what appears to be natural reasons. But none the less, there was a large market void in the United States for this very valuable crab. The crab resource, the identical species, was still very healthy on the Soviet side.

There was sort of a natural meeting of these two phenomena. We were able to deliver yellowfin sole to Soviet processors that would be used in the Soviet market place. And rather than being paid in currency, we were paid in Soviet king crab, which our company then brought back to the United States and marketed primarily here, and then sometime later in Japan.

This was at a time when the Cold War, that we've heard is behind us, was not behind us. It was at a time when it was very difficult to have an acknowledgement from either government that this kind of operation could go on. Nonetheless, we went on. There were several critical instances in the time I was with the company that made us all wonder if we had a job the next day. But nonetheless, I think both countries -- certainly the United States government -- saw that this commerce bridge across the Bering Sea was probably the one place that these two superpowers could continue to talk, continue to have dealings with each other in a way that would not get in the way of the diplomatic squabbling.

Another interesting anecdote: for several years a large part of our business in marine resources was what we called our circle trade. In this case, the Soviets still wanted yellowfin sole for their domestic use. The Soviets have large pollock populations in the Western Bering Sea off their coast, as well as in the Sea of Okhotsk; in fact, resources that are probably two or three times larger than ours. The Soviet Union, by its own admission, was not a nation of pollock eaters, but they did like these small flounders. Most of the pollock, in those days, was used in the Orient, particularly in Japan, and to some extent in Korea, but to a growing extent in the United States.

Remember also that even now the Soviet Union and the Republic of Korea do not have diplomatic relations. They are starting to trade now, but several years ago they did not trade directly. So, an American boat would catch yellowfin sole in the United States fishery zone. It would deliver that catch to a Soviet factory trawler in that same fishing zone. Those yellowfin sole were then taken home to

the Soviet Union and introduced into their internal domestic market. Our company was paid in the form of roe-bearing pollock that were caught by Soviet fishermen in their zone. Now, these were pollock just before spawning when the egg sacks are ripe. The egg sacks along with the flesh are a delicacy in the Orient, the eggs particularly.

So, we would take these at a negotiated barter rate. Then we would have a Japanese trawler, which had privileges to trawl into the Soviet Far East, pick these frozen roe pollock up from Marine Resources, a US company. On the export documents, where it had "destination", we would have our man write "to shipper's discretion". As soon as that vessel cleared the Soviet 12-mile zone, he crossed that out and wrote down "Pusan", turned right, and delivered that into the Republic of Korea. The Soviet customs people knew where it was going. The Koreans knew where it was coming from. The Koreans would take the roe from these fish, process it for the Japanese market, to which they would export it. We would then in return buy back some of the finished fillets from the flesh, and ship those back to the United States for the domestic market. Now, if the Bering Sea has not provided an avenue of commerce at very difficult times, I can't think of any other way that we'll ever do trade between these two countries.

Things have changed a little. Again, sticking with the subject of commerce for another minute, until very recently, perhaps 10 years ago, with the exception of salmon, most of the American fisheries were for domestic use within the US. A lot of these fish were landed fresh, and they were sold in the fresh markets. Many of the species that were of export value were found generally, or only in our waters: Pacific halibut, king crab (with the exception of the resources on the Soviet side), sable fish (a very expensive fish virtually all of which goes into Japan now), and several others like this.

The point I'm trying to make is that at this time we were satisfying our own markets. If the boats came in, there was fish on the market. If the weather was rough, there weren't fish on the markets. The fresh fish buyers just had to learn to live with this kind of unanticipated supply. Now, the large volume fisheries are a whole different kind of commerce that we're into. Pollock, for instance, yellowfin sole in the near future, cod to a lesser but still significant extent are

commodities. They aren't high priced luxury items that go right down a very narrow distribution chain where a fisherman knows which store his catch will end up in in two days. These fish go to an international market.

We don't own all the pollock. As I mentioned, there's about three or four times as much as we have on the Soviet side. The North Koreans harvest some 6,000 tons or 7,000 tons of pollock a year; where we don't know. There are a lot of gadoids: the cod family includes a lot of the hakes and whittings from South America and from the North Atlantic, all of which are inferior to Pacific pollock and cod. Nonetheless they're very substitutable if the price gets too high.

Beyond the biological impact of such things as the donut hole fishing or the raids into our zone from the donut hole (those are important enough in the biological context), when these same commodities show up here in this very competitive commodity market, it has a very significant impact on our ability to market those same species from our zone.

I want to end this by now making a bit of a tie-back to the science and back to where I see the continued collaborative US-USSR ventures. And I might add, I've done that for a long time. Prior to my starting with Marine Resources, I made my first trip to Moscow in 1966 when we first started technical bilateral exchanges with the Soviet Union. Then, every other year, I'd be there and in the alternating years, the Soviet counterparts would be here. We met every year with them. This was long before we had extended jurisdiction. But we all had the same interest, and that is, we had out-of-control fisheries in the North Pacific and in the Bering Sea. Some of it was our doing. Some of it was the Soviet doing. A lot of it was the doing of third parties. We were trying to find out what the biological truths were. What was being caught? Was too much being caught? How much should be caught? That sort of thing. That is still part of the data base that Rich mentioned that still is referred to from time to time.

And then of course, with my experience with Marine Resources, I think altogether I've made some 30 trips to the Soviet Union, both to Moscow in the fisheries institutes, and also into the Soviet Far East, where we were doing business with Marine Resources.

I've always been very impressed with the quality of Soviet research. They take a different approach than we do. They tend to have a more naturalistic approach. We tend to be a more applied "solve a particular problem" approach. The two melded together makes a very powerful overall research program. And I hope that as extended jurisdiction is doing its thing on both sides of the ocean -- what I mean by that is, is now it's primarily Americans in our zone and primarily Soviets in their zone, and never the twain shall meet -- that it doesn't discourage this kind of bilateral study of the oceans that are so critically important to both of us.

We've had communications problems in the past. When I was doing what Rich does now, I'd make five or six phone calls to different people in the Soviet Union. I'd send three or four telegrams. I'd use the underground express. And sometimes I'd get five answers, all of which were different, about when the ship was going to show up. The Soviets would try to query us about our plans, and we'd have the same mix-ups. And I'd hope that with *glasnost* a lot of this begins to disappear. If it does, we're going to know a great deal about a very important and, as the Dean mentioned in her opening comment, the most productive part of this world.

GRIGORIY KOVALYEV
Fisheries Section, Goskomprirada, USSR

Within Area 11 of the US-Soviet agreement, I would like to address the question of using the fish resources in the economic zone of the USSR. Wildlife use, including fish use, in the Soviet Union is regulated by the law on the environment. This is intended above all to regulate the conservation of wildlife in their natural state and to keep them intact in their natural communities, as well as to provide for a rational use of wildlife as a source for obtaining material goods, food products, and other valuable goods for scientific, cultural, educational, and aesthetic purposes.

The conservation and rational use of fish resources, as well as the resources of marine invertebrates and marine mammals, requires the implementation of a large number of measures for protecting the environment and for the reproduction of the resources both in internal lakes and rivers, and in the territorial waters of the USSR, as well as on the Continental Shelf and the economic zone of the USSR.

The management measures comprise a complex cluster of activities including: scientific development of regulations for fishing and enforcement of compliance with them; if necessary, prohibiting the harvest of those species of fish and other marine organisms that need special protection; verifying the biochemical status of lakes and rivers; and enforcement of compliance by commercial fishermen and their vessels with laws to prevent the pollution of the sea.

The main principles of fishery management are as follows: (1) establishing a minimum allowable size of fish to be caught for protected species, (2) establishing an allowable number of valuable fish that can be caught, (3) establishing prohibitions on certain types of fishing equipment, gear, and methods of catching, and (4) establishing the amount of fish that can be caught by commercial fishing organizations.

This is not the only activity that is carried out to protect our fish resources. Fishing is carried out by government establishments, by fishing collective farms, and by other organizations. They fish at sites designated by government organs as well

as well as at sites of general use, with permission issued by the appropriate Soviet organs of authority for each fishing vessel, brigade, section, or other appropriate unit.

Fishing at sites that need particular protection such as limited sites, valuable ones, can be carried out only with permission that is issued by organs authorized to do so by the USSR government. These establishments are special fishing collective farms and other organizations within the fishing industry. Fishing for scientific research purposes, acclimatization, stocking, and other types of activity are also carried out with special permission.

In accordance with the decree of the Presidium of the Supreme Soviet of the USSR on provisional measures for preserving living resources and regulating fishing in Soviet coastal waters, as well as other legislation, provisional measures were introduced in 1977 to preserve the living resources of the Pacific and Arctic Oceans. In the Bering Sea, they went into effect on 25 May 1977, and in the Baltic Sea, April 1, 1978. The protection of living resources of the coastal seas of the USSR is the responsibility of the coastal forces of the Committee for State Security, the KGB, as well as the fishery organs of the USSR Ministry of Fisheries.

Development of Soviet legislation with respect to the 200-mile limit off the coast of the USSR took place after the Presidium of the Supreme Soviet adopted a decree on the economic zone of the USSR. Under this decree, an economic zone of the USSR was to be established in the seas located outside the territorial waters of the USSR, adjacent to them, including the areas around the islands that belonged to the USSR, the outer limit of which would be located at a distance of 200 nautical miles from the lines where the territorial waters of the USSR begin.

A delimitation of the economic zone between the USSR and other countries whose shorelines lie across from the USSR shore or intersect with those waters, is accomplished, with account given to Soviet legislation, by agreement on the basis of international law.

The USSR carries out the following activities in its economic zone. It engages in its sovereign rights for the purposes of exploration, development, and

preservation of both living and non-living resources that are located on the sea bottom, in its depths, and in the surface waters, as well as with respect to other types of activities in the course of economic exploration and development of the zone. Further, it has jurisdiction with respect to construction and use of artificial islands, structures, and facilities, marine scientific research, and protection and preservation of the marine environment.

Rights and jurisdiction with respect to the bottom of the economic zone of the sea and at the depths of the sea, are determined in accordance with the legislation of the Soviet Union on the Continental Shelf of the USSR. A decree of the Presidium of the Supreme Soviet of the USSR in 1984 determined the rights of the USSR with respect to anadromous species which come from the rivers of the USSR. What is provided for is that, since they are of primary concern, the appropriate Soviet governmental organs will ensure protection of the reserves of anadromous species of fish by taking the appropriate measures, as well as establishing regulations for management of fishing, including establishment of an overall amount of allowable catch both within the economic zone and outside of it.

The implementation of the measures and regulations with respect to the anadromous species outside the economic zone is provided for on the basis of treaties between the USSR and other interested countries. The harvesting of anadromous species outside the limits of the economic zone is carried out with due account given to the requirements for preserving these species as well as the Soviet requirements for consumption.

When foreign vessels are engaged in the illegal harvest of anadromous species of fish outside the economic zone of the USSR, appropriate Soviet authorities take measures to apprehend the violators and bring them to trial. In the economic zone of the USSR, all countries enjoy free passage by ships and planes on the condition that they observe the generally-recognized standards of international law. They have the right to lay down underwater cables and pipelines, as well as to make other uses of the sea which fall under these rights.

In order to insure the optimal use of fish and other living resources in the economic zone of the USSR, each year the Soviet authorities determine the overall

allowable catch of each species of fish and other living resources, as well as the percentage of this catch that can be provided to foreign countries. The authorities also undertake measures to provide for the rational management of fishing, conservation, and the reproduction of the living resources and their protection, including apprehension and arrest of vessels.

Foreign access to the fish reserves and reserves of other living resources of the economic zone of the USSR is allowed only on the basis of international treaties or other agreements, and on the condition of full compliance with the measures on the protection of living resources, as well as other provisions and conditions. When an international treaty or other agreement is relevant, and in accordance with designated quotas for each fishing site, the appropriate authorities of the relevant country will make application to get permission to fish in the economic zone of the USSR. The application is to contain all necessary information to form a basis for making a decision on whether or not to give permission for the fishing.

When these requests for permission are considered, the Soviet side can refuse to grant them for the following reasons: incomplete information, or information that is not in accord with the conditions of the treaty or agreement, has been provided; repeated or blatant violations of the legislation on the economic zone of the USSR have occurred; or the number of applications already made has exceeded the number established in the treaty between the USSR and the foreign country on fishing. If a foreign fishing vessel violates a provision of the Soviet legislation on the economic zone of the USSR, as well as the established regulations and conditions of fishing, the permission can be rendered invalid for the period of time that is necessary to clearly understand the situation connected with the violation.

When a foreign vessel is apprehended or arrested, the relevant authorities of its flag country are immediately informed, and these authorities are kept constantly informed of the measures taken with respect to the captain or any other person on the ship in violation. People who are found guilty of illegal exploration or development of the natural resources of the economic zone of the USSR, or of illegal removal from vessels or other seaborne devices in the economic zone of the USSR, from aircraft or from artificial islands, structures, or facilities built on the

sea; people who try to release and bury substances that are harmful to human health or the health of the living resources of the sea or try to get rid of other waste materials or objects which can harm or impede the legal uses of the sea; people found guilty of polluting the marine environment by illegally releasing mixtures or substances that are harmful to human health or the health of the living resources of the sea, in quantities above established norms, or releasing other types of waste material or objects which could cause harm to coastal recreation facilities, into the economic zone of the USSR from vessels or other floating devices, from aircraft or artificial islands, structures, or facilities set up in the sea -- these people are subject to administrative penalties in the form of a fine up to 10,000 rubles which is issued at the site where the violation was observed. If the violation has caused significant damage or involves other serious consequences, or if it is repeated, the guilty parties are fined up to 100,000 rubles. The taking of administrative measures does not free the violators from having to reimburse for the damage done to the living and other resources of the economic zone of the USSR.

The system of government management of natural resources that has developed in our country is far from perfect. It is impossible to carry out an effective policy in the area of the protection and use of fish resources when issues of controlling and regulating their use are concentrated in the agency which is the user of these resources. In this connection, in 1988, the government of our country adopted a resolution and formed the State Committee of the USSR on Environmental Protection.

The USSR State Committee on Environmental Protection is the central body of the government in the area of the protection of the environment and the use of natural resources, and it carries all responsibility for protection of the environment, and for developing plans for rational use and reproduction of the natural resources of the country. The bodies of this system are responsible for controlling and protecting the fish resources and marine environment in the territorial waters of the USSR, on the Continental Shelf, and in the Economic Zone of the USSR. It is also responsible for issuing permission to use the fish resources.

At the present time, the process of forming bodies for protection of the environment is pretty well completed. The legislative acts that regulate issues of control and use of the fish resources have been drafted and are now being considered by the Soviet government. And at this time, the regulations for fishing in the Economic Zone of the USSR and quotas on the harvest of living resources in these areas are being carried out with the direct participation of the State Committee on the Protection of the Environment in the USSR.

The adoption of this sort of decision we believe will make it possible to eliminate the conflicts arising from the USSR Ministry of Fisheries contending with violations of fishing regulations over catch of certain species of fish and living resources of the sea. Thus the living resources of the Economic Zone of the USSR and the Continental Shelf will be used in a more rational way.

Such a decision we believe is directly related to the Bering Sea inasmuch as the interests of both our countries on this issue should be in accord with each other -- should be the same. And we must exert the maximum effort so that these resources, belonging to both countries, are used in a rational manner.

DAVID BENTON
Office of the Commissioner
Alaska Department of Fish and Game

I'd come here planning to discuss a number of aspects of what has been going on with the Central Bering Sea and some of the resources that have already been talked about in terms of science and the fisheries. I'm pleased to note that most of these fellows up here kept referring to all the things I was going to say, and then they wouldn't go into any detail and then proceeded to talk about all the things I was going to talk about. So, I can move right along to some of the things that Clarence raised and that I think are particularly important regarding the relationship that is emerging between the United States and the Soviet Union regarding fisheries and the Bering Sea environment.

As Jay pointed out, in May of 1988 the Soviet Union and the United States signed the Bilateral Fisheries Agreement. It was a fairly comprehensive document; it covers a broad range of subjects from salmon interceptions, to science, to enforcement, and pollock, and trade. It provides a framework for the two nations to work together, and it also establishes an organ called the Intergovernmental Consultative Committee, which would be the way for the two nations to coordinate their activities and discuss exactly how to implement the agreement.

The ICC, as we refer to it, was implemented on our side as a governing international fisheries agreement. When that was done by Congress, Congress established an advisory body of US Industry, State of Alaska, and the State of Washington to work with the State Department on developing emerging policy direction between the Soviet Union and the United States. While that was proceeding, a number of crises, as Clarence referred to them, were also developing in the North Pacific and the Bering Sea.

If we look at a chart of the North Pacific, we see a large area used for the Japanese mother-ship directed salmon fishery, another for the land-based fishery, and one for squid drift net fishing. It's a very vast part of the North Pacific and there's a lot of territory out there, and a lot of resources that are of interest to both of our nations. I recognize that's obviously not the Bering Sea, but it directly

affects a number of things that we have been doing together with the Soviet Union recently.

The crises that I'm referring to are the interception of Soviet and North American salmon by the Asian drift-netting nations of Japan, Taiwan, and Korea. Also the perception, or perhaps the awakening of a realization, that we have some serious problems in the Central Bering Sea because of the unregulated pollock fishery.

The cooperative fisheries agreement that was signed did not deal specifically in any kind of definitive terms with those issues. It did set up this mechanism, however. The first meeting under that agreement, of the ICC, occurred in February of 1989. It was a very interesting meeting. I think both delegations came not really knowing exactly what we were going to do. It was in Washington at the State Department. I can remember everybody filing into the room, sitting around the table, sort of looking across at each other and smiling and nodding, and having the sense of, "Well, now what are we going to do?"

We discussed the concerns about fisheries in general for the first day. The second day, our Soviet counterparts came with what was apparently a fairly hastily put together document. It was a proposal on salmon. They sort of handed it across to our side and said, "Well, here's a proposal." We looked at that and sort of said, "Well, we'll have to get back with you." And we went and caucused, and it was very interesting to watch the reaction of government officials on our side. It was sort of like, "Well, damn, what do we do with this now?"

We also talked a little bit about the Central Bering Sea donut hole, and recognized we had a problem, but really didn't quite understand what we were going to do. After that discussion, the Soviet side came back a little later on in the meeting and presented us with another proposal. It began to address management of pollock in the Central Bering Sea, and in fact in the entire Bering Sea. And once again we looked at that, and we go, "Hmm." We said, "Well, we'll get back to you." We went back to our office and said, "Well, damn, what are we gonna do with this?" "I don't know." We came back, thanked them for the proposals, and everybody sort of went on their way. And almost as an afterthought, we signed a

little Memorandum of Understanding that would provide for cooperative sharing of information regarding enforcement and sightings of illegal fishing activities. And that was about it in February.

Following those meetings, the US industry, who generally demonstrates very little patience for those of us that are in government, got together and said, "Alright, look, we've got to have our act together on this." Through a series of meetings, the advisory group prepared two draft US proposals which wound their way through our government and became official US documents, and which were presented to the Soviet Union at our second meeting, which was in Leningrad in September. They sort of keyed off of the proposal the Soviet side had given to us. In the space of three days, we had a new proposed salmon treaty for the North Pacific that would be very comprehensive in nature. It would prohibit the taking of salmon on the high seas beyond 200 miles; it would regulate the taking of salmon inside the zones of coastal states; it provided very strong enforcement provisions both between the respective parties and also against third parties; it would provide a very strong framework for doing cooperative science on anadromous species and other ecologically related species.

We basically hammered this thing together over, I guess actually, when you really got down to it, about a four hour period one night in Leningrad. I can sort of sympathize with our translators, because several times when we were going through the texts, the Soviet side would look at us and say, "Yes, what you're saying is very good. It's exactly what we want to do. It doesn't translate in Russian." So, we worked until very early hours of the morning and put that proposal together.

Similarly, we discussed the Bering Sea donut hole issue. As a little cultural thing, we realized that those of us on the US side kept referring to this as the "donut hole" and our Soviet counterparts would look at us very strangely when we would say that phrase. Apparently, although I don't quite understand it, when you say "donut hole", it's sort of an "in" joke among some members of the Soviet delegation at least. It means that "it's how you lose the game", or something like that. We never quite understood why they didn't like that phrase. So, we sort of

stopped using that and started referring to it as strictly as the Central Bering Sea.

We came up with another proposal there and hammered that out to form what's called the Bering Sea Fisheries Advisory Body, which is sort of an ad hoc sub-committee under the auspices of the ICC to bring our scientists together and the Soviet scientists together to sort of look at the information that both sides had to try and come up with a mutually agreeable perspective on what's really going on with pollock resources in the Bering Sea, and in particular, what the effect might be of the fishery in the Central Bering Sea.

That group met in Seattle in November. The results of that report were pretty startling. Both Soviet scientists and our scientists agreed that the unregulated fishery in the donut hole was having a fairly dramatic impact on the Bering Sea fisheries and perhaps even the Bering Sea ecosystem. When you look at the numbers that were generated at that particular meeting for the entire Bering Sea, factor in the reported harvest that's going on in the donut hole, the estimates came out that perhaps we were over-fishing the Bering Sea by something on the order of 700,000 metric tons a year.

At the same time, both sides agreed that the pollock resource was sort of gradually declining, probably at about a rate of 10 percent per year for the last couple of years. Obviously that caused us all a fairly significant amount of concern. That set the stage for our third meeting which occurred in March of this year. At that particular time, we had also had reached bilateral agreements for monitoring and enforcement with all the drift net fishing nations, "we" being the United States. We had been working through the United Nations, and cooperatively, I might add, with the Soviet Union on a resolution that would call for a moratorium on the use of drift nets on the high seas, unless effective conservation measures could be put in place to insure protection of the world's living marine resources.

When we met in March, we discussed the drift net agreements and had provided the Soviets with some information about that. They were quite interested in getting results of the research programs that would be going into those agreements, and any information that we might have. Little did we know what was

just awaiting us here in April and May when the US Coast Guard sighted ten vessels fishing in the North Pacific under the North Korean flag. I'll get to that in a second.

We formally agreed to the salmon agreement there after we worked out just some minor details. And that salmon agreement has now been forwarded to Canada and Japan for their consideration. Canada has indicated to us their comments on the draft document. I would say that, generally speaking, it's probably on the order of 90 percent agreement from Canada. The document is currently structured so that if any three of the four major salmon-producing nations of the North Pacific sign on, those four being of course Canada, Japan, the US, and the USSR, then that treaty would go into effect, and would supercede the other salmon treaties that are currently in place. In other words, the INPFC, International North Pacific Fisheries Convention between the US, Japan, and Canada and the USSR-Japan salmon agreement.

I guess the situation for us now is that we're waiting to hear back from Japan. Canada has graciously offered to host the first meeting in Ottawa and we're hoping that that's going to occur in August of this year. I think it's fairly remarkable that, in a the space of about a year and six months or so, that we have moved from a place where the two nations were not talking to each other very well about salmon, were not really coordinating their efforts in any overt sense. There had been some discussions regarding quotas, and time-area closures under the two existing treaties, but nothing really coordinated. And that we have moved from that place to where we are now, which is a proposal for a very comprehensive salmon accord among the four major fishing powers in the North Pacific.

With regard to the Central Bering Sea, following the meeting in Leningrad, once again the industry took hold of the government people by the shirt collar and said, "Okay you guys, that's really neat. Now we know we've got a problem, that we've been telling you about for a number of years anyway. So, why don't you do something about it." So, the advisors proceeded to draft up a little non-paper which talked generally about some principles for what we might do in the Central Bering Sea in terms of a management regime.

We had some informal talks on that at the March meeting with the Soviet Union, under the ICC. They started out fairly interestingly. Like the Soviets were saying, "Well, where did you come up with these crazy ideas?" And we said, "Well, we were just sort of thinking about 'em and put 'em down on paper, and just wanted to bounce them off of you and see how you would react." And we had about, I'd say, three talks and one dinner. By the time we were done with the whole thing, I think that we were about 90 percent moved along towards agreement on what a management regime might look like for the Central Bering Sea, to take care of the unregulated fisheries.

There's a lot of work that would have to be done. There's nothing official. These were just sort of bouncing ideas back and forth among the parties, those kinds of discussions, but they were very promising. Given the speed with which the two nations have moved on the salmon accord, I think that the stage is set to do a very similar kind of joint proposal by the Soviet Union and the United States to take care of our problem in the Central Bering Sea.

I guess what all this leads me to believe is that we don't really need to wait for a comprehensive organization that would take care of all of our problems at once. That would have a large bureaucracy, and it would probably take a long time to negotiate the size of the table before we ever got around to really talking about our problems. I've been very impressed with the willingness of our Soviet counterparts to talk frankly about issues, to be creative and to be willing to move when it's time to do so. I have to say that the US industry really has risen to the occasion and has been very, very instrumental on our side in making that occur as well.

Now, the importance of the relationship is not only that we happen to be the super-powers sitting across this common boundary -- it comes down to very fundamental kinds of things. For example, I think the most blatant example, in fact, is what has just recently occurred in the North Pacific. Our Coast Guard, and I believe it was in April, saw (as I referred to) a number of drift net vessels fishing in an area that was obviously illegal. They were fishing under the North Korean flag. We had no way of dealing with that. We had no vessel to go out and do an enforcement action. We had no diplomatic relationship with the North

Koreans. We had no agreements with the North Koreans at all that we could use, no way to even talk to these folks. But some of our State Department people remembered that way back in February of 1989, we almost as an after-thought, signed this memorandum to share information on enforcement. So, one thing led to another and one of our folks called up one of the Soviet's folks at the Embassy and said, "Hey, you know, we've had this really interesting experience. We've got photos, we've got the coordinates of where these vessels are, and you might find it very interesting." About a week and a half later, these vessels were boarded and were on their way back to Soviet territory. And the rest is sort of history.

They turned out to be Japanese vessels: clearly an attempt by Japanese fishing companies to circumvent the agreements that were reached with the United States. They were relying on North Korea's relationship with the Soviet Union, and expecting they would have some kind of protection that way. They also recognized that North Korea really isn't a member of the United Nations and figured that if any action took place under the auspices of the UN, that they would have some kind of mechanism perhaps to continue operating. This has caused quite a scandal over in Japan. It really underscores the importance, I believe, of just these informal relationships that we have, the ability to work together, and what can happen when our two countries really do put our heads together.

QUESTIONS AND ANSWERS

- Q** I wanted to ask Mr. Kovalyev: Twice when you spoke, you mentioned a difference in Soviet management of fisheries. You mentioned the coastal waters, the continental shelf, and the EEZ; the economic zone. Under Soviet authority, is there a difference in management between the territorial sea, the continental shelf, and the economic zone?
- A** The legislation concerning both internal waterways as well as the economic zone are quite different. What is the difference? The difference is that first of all there's a different degree of responsibility for illegal fishing. For example, if in internal waters a person catches a certain amount of fish, he could be fined 50 rubles. If an official person catches fish in that same body, he is fined 100 rubles. And as you heard in my presentation, the degree of the fine in the economic zone is significantly higher. And the management of the internal resources in the internal waterways and the economic zone differ somewhat, because as you yourselves understand, on the one hand, you have open waters, and on the other hand, you have your own sort of body of water with its own biota. But if, according to our legislation, a person illegally catches a valuable fishery resource, there are certain additional levies imposed for certain species of fish; then he needs to provide additional material compensation. Well, it differs for various species. For example, it might be 75 rubles for salmon; 100 rubles for sturgeon and so on for different species.
- Q** Is there any difference between the continental shelf and the economic zone in Soviet management then? Are they separate ocean areas under different authorities and different management?
- A** [By Oleg Kolbasov.] As far as the management of fisheries in the economic zones and in the continental shelf, both are under our fish protection organs that are under the Ministry of Fishery Resources of the USSR.

I would like to express my own interpretation of the answer to this question. I understand that the question is about certain whether the continental shelf, the economic zones, and the territorial waters all pertaining to the same

zones. These start with coastal waters and extend to a certain amount of ocean territory. Well, I wanted to say that territorial waters are part of the territory of the USSR, and are therefore under the authority of the border guards. They don't oversee the economic use but just guard the waters. As far as the continental shelf goes, there are at least two organs responsible for it. One is the fish protection organ, which oversees living resources on the continental shelf; living resources which are exploited. And as for mineral resources located on the Continental Shelf, this is not overseen by the fisheries ministry. Here authority lies with the Ministry of Geology, which, as far as the shelf's mineral resources are concerned, is in charge of their exploitation. In terms of the economics of it, here we're talking about the regulation of exploiting living resources, primarily fish resources. And with some addition, the Coast Guard vessels, the border guard vessels, help us stop or detain violators of our borders and laws.



Umiak at Gambell, St. Lawrence Island, Alaska. Photo by Paul Haertel, National Park Service.

DINNER SESSION

INTRODUCTION BY DINAH BEAR

Our evening speech is going to be presented by David Struhs, Executive Director of the Council on Environmental Quality. Besides introducing David, I would also like to take this opportunity to actually discuss the Council on Environmental Quality or CEQ. I know there are some folks in the room who really haven't had any particular reason to be familiar with it recently, and are a bit curious about what this agency really is and what it does.

The Council on Environmental Quality was established by the National Environmental Policy Act in 1970. From an organizational point of view, it's in the Executive Office of the President. The statute sets up a council of three presidential appointees, one of whom is chairman. That structure is actually in the process of change right now to a one person chairman, with an attendant advisory committee.

The Council has a number of roles within the Executive Office, one of the most important of which is advisory to the President on environmental matters ranging over all environmental and natural resources issues. It prepares an annual report on the state of the environment to transmit to the US Congress; it has responsibility to oversee the implementation of the environmental impact assessment process, which applies to all federal agencies in the Executive Branch; it has opportunities to take various sorts of initiatives in virtually any environmental or natural resource field with which the federal government is involved.

Because the Council is in the Executive Office of the President, it is always a reflection of the President's priorities and policies, and as such, has been instrumental in drafting much of the early environmental legislation in the United States, and in coordinating federal environmental policy among the many, many agencies in our government which contribute to that effort.

In the prior administration, we had a less visible role in the policy arena and somewhat reduced resources. When George Bush was campaigning for President, he made a commitment to reinvigorate the Council; a promise which is being fulfilled, beginning with the appointment of Michael Deland as Chairman of the Council (a very strong environmentalist from New England), and an immediate doubling of our resources, and a significant rise in our role of policy development and advice to the president.

I should mention that, at this dinner, we have an official from the Council on Environmental Quality from the Nixon and Ford administrations, Gary Widman here at this table in front, who was my predecessor in the Nixon and Ford days.

When Michael Deland assumed chairmanship of the Council, he fortunately brought with him David Struhs, who had served in the Regional Office of the Environmental Protection Agency in Boston, Massachusetts, as the head of the Congressional Affairs and Public Liaison Office. In his role as Executive Director of the Council on Environmental Quality, he oversees the daily work of the Council and is very involved in the policy formulation with the White House staff.

With that, let me turn the microphone over to David.

DAVID STRUHS

Executive Director, President's Council on Environmental Quality

"President Bush's Environmental Agenda"

Greetings from the White House and thank you for coming to what we believe will be a very important meeting, both in terms of environmental protection and improved Soviet relations. Let me also thank once again the co-sponsors of this conference who have not only underwritten the costs of our program, but will be contributing to important substantive discussions over the next two days. They include the National Oceanic and Atmospheric Administration, the Department of the

Interior, and the Environmental Protection Agency. The State of Alaska, particularly the Governor's office, has been an important partner in this endeavor, as has the private non-profit Center for Marine Conservation. I would like to add that we've enjoyed the support of Alaska's Congressional Delegation, in particular Congressman Don Young who had hoped to have been here tonight, but unfortunately was called back to Washington, D.C. Congressman Young has had a long-standing interest in issues relating to the Bering Sea.

As some of you know, a group of us, 12 Soviets and 9 Americans, has just returned from site visits of protected areas in Northwest Alaska. And while I can't speak for my new Soviet friends, I can say that I felt right at home. People kept welcoming me to Bush country. My apologies, by the way, to the translator. Henry Gannett of newspaper fame got it right when he wrote back in 1899, as part of the Harriman expedition, "If you are old, go by all means, but if you are young, wait. The scenery of Alaska is much grander than anything else of its kind in the world, and it is not well to dull ones capacity for enjoyment by seeing the finest first." The land of Alaska is grand, but I might add that, as in no other part of our country, the land and the water and the people are so closely tied. We must keep this in mind as we do our work here, for we are talking about a grand people with proud traditions who are one with their environment. This is equally true on the both sides of the Bering and Chukchi Seas.

I'd like to tell a little story. I have a son by the name of Andrew who celebrated his third birthday the day I left Washington to come to Alaska. Before leaving, I took him to the toy store to pick out his birthday present. And now, you must understand the trip alone with dad, leaving his three siblings behind, including a new-born sister who was capturing all too much of mom's and dad's attention, was as much a part of the treat as any toy he might get. It was one of those rare, wonderful moments when father and son spend some precious moments together. Sensing his excitement, I parked the car and playfully challenged him to race to the toy store door. Well, he set off as fast as he could run while I held back, allowing him to place some distance between us, a distance which, as you might guess, I intended to close as soon as we drew near the finish line; a photo finish in which Andrew would touch the door's handle just moments before I would, adding to his sense of excitement and fun. Well, as I lengthened my stride

to begin closing this gap, Andrew turns his head, looks over his shoulder, and yells, "Daddy, don't beat me! Daddy, don't beat me!" I broke my stride and sheepishly walked the short but seemingly great remaining distance, confident that every person in earshot assumed that I was a child abuser. The point is, perceptions are important, and so too are misperceptions.

It was in 1973, when relations between our nations were in a less happy state, and the world was on edge over our possible misperceptions, that President Nixon and Chairman Podgorny signed a number of cooperative agreements in an attempt to improve our understanding of one another. One of them was in the field of environmental protection, and it's because of that agreement and the dedication of many of you who are here today, that this bilateral conference is occurring.

While the world has undergone a political transformation of epic proportions since then, and with it so have our perceptions of the possible. When President Bush and President Gorbachev met last week to sort out the results of 100 years of history in Europe, they spoke in terms of tearing down iron curtains, but when their attention turned to this side of the globe, they spoke in terms of building up bridges, bridges of hope and peaceful cooperation. The recent summit resulted, as you now know, in an agreement to establish an international park "to preserve the unique natural and environmental and cultural heritage of the Bering Sea Region." Perceptions are clearly changing.

It is clear that both of our nations view this part of the world as "frontier", frontier in terms of its untamed beauty, but also a new frontier for improved relations between us. Not surprising, for this is Beringia, the land of the possible. It is a land where one's perceptions constantly test reality; where day is night and night is day; where modern meets traditions of 1,000 years; where East meets West and West meets East; where tomorrow meets today. As we share our perceptions of the future of Beringia with each other over the next two days, it will be readily apparent that each of us has a different perspective; fishing interests, the oil and gas industry, subsistence hunters and gatherers all have different ideas of managing the resources that lie at the crossroads of our continents. Inevitably there will be disagreements, and just as inevitably there will be misperceptions. It may be helpful, or at least we might find solace, in remembering that the history

of Beringia has been fraught with misperception, and yet its vitality lives on, for nature is truly larger than history.

In 1778, Captain James Cook, having just discovered the Hawaiian Islands, headed north to the Bering Sea in search of the fabled Northwest Passage. While his perception of the geography was wrong, his exploration created the first maps of the Bering Sea during a journey which took him far north into the Arctic Ocean. And then there is the story of the Alaskan purchase. When the purchase became final in 1867, the American perception was that this region was an Arctic wasteland, and they referred to the transaction as "Seward's Folly". However, the Russian Governor in Sitka, Demetrie Maksutov, had a different perspective. He had traveled extensively in Alaska, and to him the value was more than just a function of the economic worth of the natural resources that could be exploited from the land. His equation included the broader environment of the entire region.

Governor Maksutov was ahead of his time with his perception of Beringia. He questioned, "How can you place a dollar value on land such as this, when there are not even any words that can tell of the hidden spirit of the wilderness; that can reveal its mystery or define its charm?"

Then, there's the story behind the story of Secretary of State Seward's so-called Folly; a story of mixed signals and misperceptions. In 1856, the Crimean War imposed such a burden on the Russian economy that serious discussions were being held in Moscow regarding the sale of Alaska. No actions were taken. The United States backed the Russians during that war by making known to the other countries in Europe that we were supporting the Czar. After the Crimean War, Russia was prepared to sell, but then the United States was fighting the Civil War, and our National government was in no position to fund the purchase.

It was during the Civil War that some European countries were preparing to come to America to take territory from a war-weakened United States. However, the Russians sent two flotillas to US waters to help defend us. When the Civil War finally ended in 1865, historians tell us, the American perception was that the Russians were anxious to sell Alaska to bolster their economy with much-needed funds. Because of Russia's assistance during the Civil War, our government felt we

owed it to the Czar to purchase the land. On the other hand, the Czar perceived the United States government as hungry to purchase the property and felt that it would be beneficial to Russia's friendship with the US, and agreed to the sale.

Another vignette. The typical American perception of the Second World War is of two fronts: 1) the Atlantic, stretching from Europe to North Africa; and 2) the Pacific, from Hawaii to Japan with hundreds of islands in-between. But in fact, a 1939 report by Charles Lindberg showed that the most economical way to get from the United States to Asia was across the Bering Sea. This report was the basis for the 1941 Land-Lease Program Plan to transport planes and supplies to the Soviet Union via a chain of airports, running from Fairbanks to Nome and beyond. In fact, there will be a 50th Anniversary Celebration of the Land-Lease program in Yakutak next year.

Indeed our countries' perspectives have changed several times over history. For centuries, coastal Eskimos hunted and traded freely between the two continents. In an exchange of memos in 1938, our nations noted the traffic crossing the Bering Strait, but found no fault with it. But 10 years later in 1948, by common consent, our countries forbid visits across the Bering Sea. Perceptions have happily changed again, for today these are restrictions for natives have been eased; a joint environmental science center on Chukotskiy Peninsula has been proposed; three ports along the Soviet side of the Bering Sea have been opened to fishing boats from the United States; there is improved joint management of fisheries, and trade missions are striving to renew commercial ties.

I recount these events not to educate you, for you are clearly the experts on this region, but to challenge you; to challenge you to communicate honestly and clearly with one another as you work towards resolving difficult natural resource issues. Distinguish early on between fundamental differences and those in which beneficial compromises can be sought. Remember over the next two days that perceptions are important. Strive to avoid misunderstanding by dealing with real quantitative analysis that is insulated from political pressures and is of the highest integrity. Keep in mind that in addition to the recent Summit Agreement on establishing an international park, our governments also recognized at the Summit, and I quote, "The great importance of full and open exchange of environmental data

and to careful coordination of existing global atmospheric, terrestrial and ocean monitoring systems." Accordingly, our presidents have endorsed intensified bilateral cooperation in areas of environmental, ecological and pollution monitoring and related research.

I propose we work together to establish indicators for assessing trends in environmental quality, perhaps beginning in the Bering Sea Region. Let's think big and build upon this agreement from the Summit. But let's also set milestones for achievement that will deliver real results in real time. Let us remember the link between ecosystems and human health -- human populations are only as healthy as the natural environments upon which they depend. A point, incidentally, not lost on those familiar with Beringia. At the same time, however, let us recognize relative risks in determining where to spend limited resources. Let's look to the future by pulling away our legal and administrative blinders which segment the environment artificially into a series of media-by-media, pollution control strategies, and develop a more holistic approach to environmental protection. The time has come to stop moving pollution around from air, to water, to land, and back again. It is no longer effective or efficient to control pollution. Wherever possible, we must try to prevent pollution at the front of the pipe before it is produced. And the best way to achieve this goal, I suggest, is not through another regiment of commands and controls; it is instead to harness the power of the market place in the service of the environment; to work with industry; to make it in their economic interest to dramatically reduce the amount of waste they generate.

Let me recap. Let us clearly identify 'win-win' opportunities and avoid mis-perceptions. Let us develop data, which is beyond challenge to identify environmental trends. Let us consider the health of human populations in the context of ecosystems and relative risks. Let us look at environmental protection futuristically by looking at it holistically. Prevent pollution; don't move it around; and harness the marketplace. That, in essence, is our environmental agenda in one -- that I believe lends itself well to issues in the Bering Region.

In closing, virtually every American knows which presidents are enshrined on Mt. Rushmore. Less well-known, however, is that each was chosen not to represent an individual but rather to represent an ideal. Washington represents

freedom; Jefferson, democracy; Lincoln, equality; and Theodore Roosevelt, conservation. Now, even our Soviet visitors know that, in the American galaxy of ideals, conservation is rarely ranked up there alongside freedom, democracy, and equality. But that is what President Bush wants to achieve, and that is the goal we are striving for.

In Beringia, however, we will only exceed if we work cooperatively together with our neighbors to the west, for nature knows no boundaries. It's upon you; it's upon all of us that the future of this compelling land depends.

Thank you, and good luck.



Northern fur seals in a breeding rookery at the Pribilof Islands, Alaska.
National Marine Fisheries Service photo.

PANEL TWO
CONSERVATION AND MANAGEMENT OF MARINE MAMMALS
AND MIGRATORY BIRDS

INTRODUCTION BY DINAH BEAR

This morning, we're going to start off with what I think will be an extremely interesting panel on marine mammals, and we're also going to have a discussion about migratory birds, which is not on your agenda. It turns out we have an expert in that field from the Soviet Union as well as some American expertise in that field.

The Chair of this morning's panel is Donald Baur, who has years of experience in legal matters related to marine mammals, as well as migratory birds and other wildlife. Donald has worked in the Office of the Solicitor in the Department of the Interior for several years before joining the Marine Mammal Commission as its General Counsel. The Marine Mammal Commission, of course, is a small agency in the federal government which has particular responsibility for both scientific and legal contributions to decisions affecting marine mammals.

In 1987, Don left the federal government and joined the law firm of Perkins Coie, which has offices on both the West Coast and in Washington, D.C.

OPENING REMARKS BY DONALD BAUR

What we are going to do is try to promote as much discussion as possible. This is an unusual opportunity to get this type of expertise together from these two nations, and we hope to take as much advantage of that as possible.

The issues that we've chosen for discussion today are as follows. We'll begin with a brief overview of the laws which apply in the Soviet Union and the United

States to the management of marine mammals and migratory birds. The second issue will be the role of marine mammals in the ecosystem at large, with a particular emphasis on Steller sea lions. Third, we'll discuss walrus. Then we'll talk about subsistence uses of marine mammals, and the importance of marine mammals to subsistence life style of Native Alaskans and Natives of Siberia. We'll follow that with a discussion of migratory birds.

I'd like to introduce the members of the US team that are on the panel. First, Dr. Bud Fay, Professor at the University of Alaska and a member of the Marine Mammal Commission. Then Don Mitchell, who is an attorney in Anchorage and probably this country's leading expert on laws that apply to Alaska Natives. He's formerly General Counsel for the Alaska Federation of Natives and the Vice President for that organization. Next, Jim Magdanz, who is a subsistence resource specialist for the State of Alaska and lives in Kotzebue. Then, Richard Townsend, who is the president of his own environmental consulting firm (Townsend Environmental) and is here on behalf of the Center for Marine Conservation. He will speak about Steller sea lions. Finally, we have John Rogers, who is the Deputy Regional Director for the Fish and Wildlife Service in Anchorage.

INTRODUCTIONS OF THE SOVIET PANEL MEMBERS BY GENNADIY OSIPOV

[Editor's Note: Due to an operator's error, the first part of the introductions was not recorded and consequently was not transcribed.]

. . . Lyudmilla Bogoslovskaya. She works in the Academy of Sciences of the USSR. Lyudmila Bogoslovskaya is the Chairman of the Soviet working group on the organization of the International Park of the Bering Strait. To my right is Alexander Golovkin, who is the chairman of the Institute for the Protection of the Environment. He is the head of the laboratory on rare and vulnerable species of birds. He is an expert on marine birds. To my left is Victor Naumov who works with the State Committee for the Preservation of Nature. He's the chairman of that commission for the Magadan Region at the Council of Deputies of the Magadan Region.

GENNADIY OSIPOV

Goskimpriroda USSR, Legal Branch

[Editor's Note: The translation of the initial part of this presentation was incomprehensible in places. I have attempted to make sense of it, but responsibility for any errors or omissions is solely my own.]

Questions of Soviet law will be discussed in accordance with the agenda of the conference. I will discuss the laws of the Russian Republic, as well as the Soviet Union, on legal measures for the protection of marine mammals, their care, and the use of these resources by the local populations that use marine mammals as a means of survival.

Two of the Soviet participants already touched upon different aspects of the protection and use of living resources. I would like to continue the discussion, touching upon several questions of existing legislation bearing upon animal life, some questions on future Soviet law on the protection of the environment. I would like to note that the question of protection and use of marine mammals is regulated in the USSR within the framework of legislation on the protection and use of animal life as such; so-called fauna legislation.

We have fines which have to be paid for causing damage to or for illegal hunting of birds, as well as whales and other marine mammals. We also have such regulations spelled out in the different conventions to which the Soviet Union is a signatory. The Constitution of the USSR and the Constitution of the Russian Federation have necessary measures for the protection of the animal world, based on scientific use. And there are special laws dealing with the question of the protection and use of the animal world. For example, the legislation of the Soviet Union and the Union Republics take into account questions of protection and use of animals.

These laws contain measures of the utmost importance for dealing with the protection and rational use of animal resources. They also include measures for

the protection of the environment in which the animals live. On the level of the Soviet Union and the Russian Federation, there are many other types of laws which have been developed and which include provisions on the protection and use of animals and use of animal resources. They also contain measures to facilitate hunting, fishing, as well as subsistence hunting for the Native populations of the North.

Looking at the interests of the small populations of Native peoples, the new legislation on use of the land, which was acted on February 28th of this year, identifies areas of traditional use of hunting, fishing, and other types of subsistence activity. I think this will be of the utmost importance for small populations of the North.

As far as I'm concerned, however, I do not think that we have good legislation on the protection of animal resources. There are some flaws in it. I think our legislation in this field probably has all of the negative aspects of the same type of legislation in other countries. We can't be happy with the existing legislation, considering the fact that the current measures for the protection and use of animal resources leave us worrying about the animals' future. Specifically, the laws are lacking in the following respects: they are not comprehensive enough; they're not based on economic, biological or scientific facts; and they're top-heavy with legalisms that bear little relationship to reality, as well as mutual contradictions within the laws themselves. They're burdened, as well, with the legislation of the Russian Federation which has outgrown its use: the legislation of 1960 which also contains provisions on the protection of animal resources.

But the main negative aspect of this legislation is the fact -- Professor Oleg Kobasov mentioned this yesterday -- that it lacks an effective enforcement mechanism. Also, the laws on animal resource use, as we mentioned, are detailed in several subsidiary legislative acts. At times they are distorted to such a degree that the original intent is completely unrecognizable. They are especially changed by local statutes.

[Changed interpreters] . . . becoming depleted. The losses are very great. Apparently human communities are irreversibly losing things that science has not

yet come to know. Of course, it is difficult to assess, in dollar terms, the loss of one species of wildlife or another, but of course not everything can be measured in dollar terms because nature is the original source of both material and spiritual values. Nonetheless, we can cite some data about the losses incurred from the non-rational use of nature and the environment, and on the basis of this data, we can come up with a certain idea of the damage done as a result of non-rational use of wild resources. This is very important, because in connection with the fact that the International Park is being established, this will required from the USSR to carry a certain portion of the expenses.

As a whole, the damage or the losses incurred in the Soviet Union from unfavorable impact on the environment is determined by the Central Directorate of the Mathematical Institute of the USSR Academy of Sciences. In the last five year plan, it was estimated to be about 50 billion rubles a year. Some think that this is an inflated figure; some think that it is too low. At the same time, however, for environmental protection from '76 to '88, the period of those 12 years, in the USSR, we spent more than 100 billion rubles, including 30 billion in government investment.

In the global forum that took place in Moscow on environmental protection (it took place this year), the idea was expressed that, for the purpose of environmental protection, we need to spend three percent of the gross national income. Expert analyses in the Soviet Union so far show that, for the purposes of environmental protection, we are spending only one percent. But, I can say that, during this year (1990) for environmental purposes, we do plan to take funds from all existing sources so that we can spend 19.7 billion rubles. This includes 2.9 billion rubles for government investments, and 150 million rubles to maintain the recently established state committee for environmental protection.

Since I've raised the question of *Goskompriroda*, the State committee, I would also like to express the notion that I must be frank with my partners, and we hope that our partners will be just as candid with us. The question of managing the environment, and particularly managing our animal resources, has not found its logical completion within the framework of the work being carried out in various

scientific research institutes, and particularly, the the Government Academy of Sciences.

Personally, I am disturbed by how unstable the situation is at *Goskompriroda*, the State Committee. This system of management was born amidst great birthing pains, one could say. As it happened, this turned out to be the least favorite child of all of the federal departments or ministries having to do with industry. It was also the least favorite child of the government ministries and departments, which earlier (some of them are still doing this) carried out the functions of government control and enforcement of protecting and using natural resources. I think that Nicholas Robinson very concisely put his finger on this deficiency of ours in our system of managing natural resources. Indeed a real struggle is going on between the State Committee for Environmental Protection and a number of ministries and agencies over whether the State Committee should exist or not exist as a federal agency. Unfortunately, I can say no more about this issue, so I will go onto the next.

The next issue, as I promised, is the draft of the future legislation about environmental protection in the Soviet Union. Yesterday, Professor Kovalyev told you that we do have draft legislation ready. The State Committee on Environmental Protection of the USSR was the one that drafted this legislation, and it is directly responsible, together with the Ministry of Justice of the USSR. It has done a work of great complexity in drafting the legislation. An interagency commission was established, made up of leading scientists and experts from the Academy of Sciences of the USSR, from the State Committee for Education, the Ministry of Justice of USSR, all the ministers of the Union Republics, as well as representatives of interested public environmental organizations.

The draft legislation is seen in different ways by different people. The industrial ministries would like to see a declaration or slogan as part of it. So, there really is a real battle going on in order to move this legislation forward. It is up to the level of the Supreme Soviet of the USSR. At the present time, this legislation is being considered in the commissions of the Council of Ministers of the USSR.

Now, a little bit about this legislation, in particular and specific. It differs from the existing laws in that it proposes to strengthen a comprehensive approach to environmental protection: a comprehensive ecosystemic biosphere approach, if you will, in order to take into account the necessity of protecting various natural populations. This draft legislation is very different from existing laws that we have, because it tries to expand very broadly the rights of the citizens in the area of environmental protection. There is an attempt being made to strengthen the right, which apparently will not be anything new for Americans, but which undoubtedly is something new for us; that is, the right of citizens to address the enforcement agencies on issues involving these agencies; to sue them for damages as a result of unfavorable impact on the environment. Much emphasis is being laid on state environmental impact assessments and we are strengthening the Institute of Standardization with respect to environmental protection. Of great importance also is the economic mechanism, because we think that it's necessary to take into account both ecological and economic factors, and in a whole number of instances, we must give priority to the environmental interests over economic interests.

This draft legislation has the traditional statute about administrative jurisdiction, and I believe that this is enough in my brief description of this legislation. In conclusion, I would just like to note that our Presidents -- the Soviet President and the President of the US -- have taken an important and very large step toward improving and protecting our environment. I liked very much how Dinah, in her introduction, said that this was not the final, final step, but there is much work to be done. Let us work together for the good of both our peoples in the area of the environment.

DONALD BAUR

Attorney, Perkins Coie, Washington, D.C.

I will be very brief in describing the United States authorities that apply to marine mammals. In other parts of this discussion, I believe we can pick up on some more of the substantive legal requirements that apply in this country. So, I will simply provide a very general overview.

Two statutes are of primary concern: The Marine Mammal Protection Act of 1972, and the Endangered Species Act, which had its most significant amendments in 1973. The Marine Mammal Protection Act has two principal objectives that are of significance to us here today. First, it requires the Federal Government to take actions to see to it that marine mammal species and population stocks do not diminish beyond the point at which they cease to be functioning elements of the ecosystem of which they are part. And consistent with that, they should not be permitted to decline below their optimum sustainable population level. I'll come back to the OSP concept in a moment.

The second objective that is actually identified in the MMPA as the primary focus of the act, is that federal agencies are to take actions to maintain the health and stability of the marine ecosystem. And the Act actually specifies that the attainment of optimum sustainable populations, or OSP, is a secondary concern to ecosystem health and stability.

The OSP concept is at the center of MMPA management objectives. OSP has been defined as a range population between the carrying capacity of the environment and the maximum productivity level of the population or species involved. Although the maximum net productivity will vary from species to species, there has been a rule of thumb that has developed, which is that 60 percent of the carrying capacity of the stock or species equates to the MNP level. If a species or stock drops below the MNP level, restrictions kick in under the MMPA that can restrain the ability of US citizens to take action that will affect those marine mammals.

The principal legal mechanism established by the MMPA to achieve these objectives is the moratorium on taking and importation of marine mammals and marine mammal products. The moratorium or prohibition on take, which covers not only the killing of marine mammals, but also injuring and harassing, has several exceptions to it. Permits can be granted for scientific research, public display, and species enhancement. There is an exception for Native take, which allows Alaska Natives to take marine mammals for subsistence purposes or for purposes of creating authentic Native handicrafts. Their take must be in a non-wasteful manner. Native take cannot be regulated by the federal government unless the stock involved has fallen below its MNP level and becomes depleted.

There is an exception for allows for regulations to be promulgated that will authorize non-fisheries activities such as oil and gas development to occur, even if they will result in a take of marine mammals, provided that the take is small and will have a negligible impact on the species.

At this time, we are in the midst of a blanket exemption which has been granted to commercial fisheries in the United States for incidental take. The purpose of this exemption, which has certain controls imposed upon it to insure that marine mammal species will not be adversely affected during this time, is to provide the federal government with the opportunity, through the Secretary of Commerce, to develop a comprehensive plan for regulating incidental take in fisheries, and to make recommendations to Congress by 1993 for Congress to consider in the next re-authorization of the MMPA. It is anticipated that, at this time, there will be an amendment to the Act, which establishes a new program for authorizing incidental take in fisheries activities. This is a very important review that has just been initiated by the National Marine Fisheries Service.

The MMPA also provides for the preparation of conservation plans, which identify actions that should be taken to protect marine mammals. These plans are required for depleted marine mammals, and are to be prepared as soon as possible. A deadline of December 31st, 1989, was established for a conservation plan for North Pacific fur seals, and December 31st, 1990, for Steller sea lions, given the dramatic declines of both of those species in our experiences.

Section 108 of the MMPA concerns international efforts to protect marine mammals. In my experience, this has been a provision which has essentially been forgotten. It requires federal agencies to take actions to initiate negotiations and agreements with foreign countries for purposes of taking actions that will address marine mammal conservation concerns. This section of the act is seldom referred to and there is little going on, outside of the scientific exchanges of information which occur in the marine mammal area, in the direction of developing international agreements to address concerns with these migratory species.

I note that although the MMPA has as a primary objective maintaining the health and stability of the marine ecosystem, this concept is not spelled out in the act in any great detail. [Gap in recording and transcription] . . . seem to know exactly what it means under the statute, and how it is to be applied. An additional problem with the MMPA, in my opinion, is that it provides really only one management tool, and that is the moratorium on taking. It does not provide for affirmative actions to be taken to protect habitat, or to take other actions that may be necessary to protect marine mammals, or help to recover them to a level within their OSP range.

The Endangered Species Act has three protected classifications: (1) species that are endangered, those being at risk of extinction through some or all parts of their range; (2) species which are threatened, which are those that are likely to become endangered; and (3) critical habitat, which is a designation of areas of land or water that are essential to the conservation of the species. The Endangered Species Act, like the MMPA, has a prohibition on taking with certain exceptions to it including Native take. There are exceptions to the Endangered Species Act that are not found in the MMPA, such as authorization for incidental take, that occurs through a species conservation plan that has been developed via a private party who will be undertaking activities that could affect an endangered species.

The Endangered Species Act also provides another management tool, which has been very effective in providing protection to listed species. This is the "no jeopardy" clause of Section 7 of the Act. It prohibits federal agencies from taking any actions, including the issuance of permits or the providing of funds, that will jeopardize a listed species. The determination of jeopardy is to be made by the

Fish and Wildlife Service for species under its jurisdiction, or the National Marine Fisheries Service for species under its control.

I think with that brief overview, I'll bring to a close the discussion on legal authorities, and see if there are any questions from the audience or the panel on these laws.

QUESTIONS & ANSWERS

- Q** Gennadiy, I have a question for you. In your discussion, you focused on existing legal authorities that cover hunting and taking. Are there any existing laws in the Soviet Union which provide for protection of marine mammal habitat areas and set those areas off limits to certain types of activities that could destroy that habitat?
- A** Donald, I'd like to say that we have legislation on protection of the animal world. It also includes protection of animal life in territorial waters that come into the jurisdiction of the Soviet Union. And legislation dealing with the specially protected areas that deal with migration of animals, such rules do exist, and it's based on the legislation of the USSR and of the Union Republics.
- Q** Don, we heard the Soviet speaker talk about enforcement, the feeling that they were not effectively enforced. I was wondering what your assessment is as to the effectiveness of our statutes and regulatory schemes for protecting marine mammals?
- A** Enforcement of the marine mammal laws is difficult for a number of reasons. One is that much of the activity occurs at sea and it's not easy to detect and monitor, and for that reason, enforce. The primary mechanism that's used to address that is through placement of observers on vessels that are likely to interact with marine mammals. In recent years, there's been much more emphasis placed on getting observers on these vessels or on shore to regulate near-shore activities. I think that increased emphasis has been valuable and is improving the enforcement program. This consideration that's going on right now for developing a new incidental take program will be focused in large part on how to make that a more effective enforcement regime and develop a way to balance between the legitimate interests of fishermen who conduct activities that impact marine mammals and providing sufficient protection to marine mammals. So, in the past there have been some problems, but I see an improving trend.

ASYLBK AIDARALIYEV

*Director, Institute of Biological Problems of the North
Academy of Sciences of the USSR (Siberian Branch)*

[Editor's Note: Due to an operator's error, the first part of this presentation was not recorded and consequently was not transcribed.]

. . . systems in the environment. The tundra and the low temperatures of the permafrost soil create low productivity of ground or freshwater systems, therefore that's why Native peoples' civilizations developed primarily in the sea coast areas. For such peoples as the Aleuts and the Eskimos, the sea became the only source of life and cultural development.

The biological resources of the Bering Sea are extracted almost exclusively by the countries of the Pacific Rim. Without trying to analyze the structure and the volume of this activity, I'd like to emphasize that from the economic standpoint, this kind of activity has a great potential. The intensification of this extraction will increase through a more rational distribution of hunting and fishing rights for these species.

One should bear in mind that the exploitation of the Bering Sea resources will increase in the near future regardless of what it is that we may intend. This is an objective reality. Therefore, the task of ecologists is to do everything possible to ensure that the economic exploitation of these resources causes as little harm as possible to nature. Aside from that, we should bear in mind that the increase in the exploitation of these resources will occur as other forms of economic activity are developed as well.

For example, for the Soviet Union, the Bering Sea is the main outlet to the northern passage which connects the European and Pacific parts of our country. More than 90 percent of the trade that enters Magadan Oblast comes through sea channels. Through the course of the past 15 years, the number of civilian commercial marine vessels has increased by 1-1/2 times. There are new methods being developed for year-round navigation instead of three or four months worth of activity. All of this increases the possibility of polluting the area.

The economic and social side of the Bering Sea region at present causes great concern on the part of people in the Soviet Union. The strategy for developing the Northern Territories -- their incorporation into the country's economy -- was developed without keeping in mind the specific natural and climatological conditions of the area, and without consideration of the needs of the local Native populations. As a result of the economic expansion, there was a degradation of the landscape and serious damage was caused to the surrounding environment.

First of all, this policy caused harm to the small Native ethnic groups, which saw their environments severely damaged. The young generations of the northern peoples found itself torn off from the traditions of its people. In part, even the languages of the smaller nations became distorted as a result. And this is the basis of any kind of self-consciousness for any ethnic group.

There is a great deal of work that needs to be done to correct these errors, and to create harmonious development of the Bering Sea Region. The most decisive word in this must be given to scientists, and exclusively at the international level. Separate scientific research carried out in each country will not solve the problem because we are dealing with a unitary ecosystem on both sides. The same species of animals live on both sides of the area. The same peoples, with the same cultures and histories live on both sides of the Bering Strait.

Soviet and American specialists have acquired a great deal of experience in studying and conserving species of wildlife in the Beringian area. It is worth noting, for example, joint projects for saving Pacific walruses and for the acclimatization of muskox on Wrangel Island. The problems of the Bering Sea cannot be examined separately from the Arctic Circle, and are affected by Pacific Ocean waters and air masses as well. All large populations of animals in the Sea of Chukotsk, including birds on the mainland, populations of walruses, and including the populations on Wrangel Island, all affect the Bering Sea one way or another. I think we need to develop a system of priorities for studying and for conserving the Bering Sea ecosystems. It is necessary to continue these studies of different species and different groups of organisms. These studies are all the more

important because in our study of these biological communities, we lag behind our American colleagues in a number of fields.

At the same time, we need to carry out some short-term inventories of the conditions of the different kinds of resources available in the Bering Sea Region. It is also necessary to do some work on the evaluation of the coastal landscape, that is, on the degree of pollution and the degree of anthropogenic transformation brought about in the region. Work in this regard will enable us to come up with the necessary data bank concerning the use and conservation of the resources in the region. I should add that the Scientific Council on the Study of the Arctic under the auspices of the Academy of Sciences of the USSR is carrying out this kind of work at present.

Along with developing a series of principles and with the regimen for the use and exploitation of natural resources, we need to pay attention to the different types of management of economic activity that can be carried out to minimize the amount of damage caused to the environment.

We can expect a great deal of effect on marine life in the Continental Shelf area as that area becomes more and more developed. The thing is, given the great degree of inertia in the marine environment, we can expect far more profound effects than would be seen on land. We can anticipate with a certain amount of confidence that our exploiting certain biological and mineral resources will cause significant changes in the natural environments and in the ecosystem as a whole.

Therefore, it follows that we need to become engaged in some long-term monitoring of the Bering Sea ecosystem. The study of Beringian landscape is necessary, not only in its present state, but in trying to ascertain its prior biological status. The idea of Beringia in and of itself, which is something that existed from the a long time, has become useful in and of its own right, and has given rise to the science of Beringology.

The problems of Beringia are hardly exhausted. We can expect important results from our scientists both in terms of information on evolution and in terms of the study of social structures. An important aspect of these studies, which we

need to resolve quickly, is the organization of long-term monitoring on Beringian natural systems. The necessity for monitoring the natural environment is quite obvious. I don't think we need to go into great detail about this.

I only wish to emphasize certain particular aspects of the Beringian area. It is well-known that global changes of the natural environment which are occurring in our time, have their greatest and first effects manifested in the Polar regions. In this respect, the northern part of the Bering Sea, bordering two oceans and two gigantic mainlands, as well as two countries with significantly different economic systems, makes for a good project for a global monitoring study.

How to structure and how to distribute this monitoring system is a separate matter. This requires some detailed discussion and study. Nevertheless, it's quite obvious for us that we need to set up a monitoring system in the Bering Straits and ideally in the Diomed Islands. The organization of this ecosystem monitoring system is closely related to the system of developing protected natural territories or preserves, insofar as parks enable us to carry out a number of environmental monitoring functions.

At present, the Asian part of the area has two functional parks: the Wrangel Park and another on the eastern part of Kamchatka. Both of these parks are outside the Bering Sea Basin, yet the information that we obtain there about natural dynamics can undoubtedly be used in studying the issues concerning Beringia. Alongside the Bering Sea itself, we have two preserves in the lower portion of the Gulf of Anadyr. There's also a broad spectrum of zoological species located on the Commander Islands Park.

But such a low level of species preservation in no way corresponds to the actual needs of preserving nature at present. I should note that the Institute Study for the Problems of the North has often raised the issue of creating a park on the Chukotskiy Peninsula. We have the necessary materials, but unfortunately these proposals have not been supported as of yet. I think that given that an international park is being created at present, these materials could become quite useful at present.

In conclusion, I would like to thank the organizational committee, and would like to add once again that the optimization of a natural resource use in the Bering Sea -- the efficient protection of its natural resources -- is possible only by using a multidisciplinary research approach. In this respect, I would like to give a brief explanation to our American colleagues about the work of the Far East branch of the USSR Academy of Sciences whose scientific studies encompass Magadan Oblast, the Khabarovsk area, the Amur Oblast, Sakhalin, and Kamchatka. The Far Eastern branch of the USSR Academy of Sciences encompasses 27 scientific research institutes. Many institutes over the course of a long period of time have carried out their research on the subject of the Bering Sea. These include the Institute of Oceanology, the Institute of Marine Biology, the Institute of Biological Problems of the North, the Institute of Hydro-ecological Problems, and the Institute of Natural Systems. All these institutes have gathered quite a lot of data on the Bering Sea Region. Aside from that, the Far Eastern branch of the Academy of Sciences of the USSR has its own research fleet and has several ships out at sea at any time during the year.

I would like to add that, in order to resolve these problems, a great deal of work can be done by establishing an international research center which is beginning to be organized by the Far Eastern branch of the Academy of Sciences and the University of Alaska. Our first task is to create a data base on Alaska and the Magadan Oblast. One can assume that this center will give us the basis for carrying out a detailed study and analysis of the situation in the Bering Sea -- the aspects pertaining to the environment, the economy and Native peoples.



Mature male Northern (or Steller) sea lion with smaller females. National Marine Fisheries Service photo.

RICHARD TOWNSEND
*Townsend Environmental
Consultant, Center for Marine Conservation*

For those people who don't know what Steller sea lions are, they're similiar to the trained sea lions in oceanariums and zoos. They're a little bit bigger, a little bit lighter colored, and in my experience, a whole lot meaner. As for the status of the Steller sea lion, they are found in the coastal water around the rim of the Pacific, from Southern California to Northern Japan, as well as in most areas of the Bering Sea. They are especially abundant along the Gulf of Alaska, through the Aleutians, in Bristol Bay and in the Pribilofs. In the 1950's, the world population was estimated to be about 240,000 to 300,000. By the mid 1970's, observers knew that the number of Steller sea lions in the Eastern Aleutians had dropped by about half. This decline spread eastward to the Kodiak area by the late 1970's, and westward through the Central and Western Aleutians in the early and mid 1980's.

In the area between the Kenai Peninsula and Kiska Island, the population dropped from the 1960 level of about 140,000 animals to about 68,000 in 1985. By last year, the population was down to about 25,000 animals. This means they dropped 63 percent in the last five years. In those last five years, the world population went down by 50 percent to a total of about 63,000 animals. Projections indicate that the species may become extinct in a little more than 20 years if it keeps going at the same rate. We're talking about in 20 years maybe having 130 animals left. The causes of the decline are not fully understood. Such things as predation, redistribution, commercial and subsistence harvest, and pollution have been dismissed as causes. Disease is still a possibility as are changes in oceanographic conditions and interactions with fisheries, especially the pollock fishery.

Fisheries interactions include: incidental catch, intentional killing, entanglement, and prey reduction. Fisheries are believed to account for at least half of the decline in the species, with prey reduction being the primary suspect. This situation, the apparent effects of fisheries on the Steller sea lions, illustrates the problem of interactions of all species in the Bering Sea ecosystem. We know

the law of ecology that says, "Everything is connected to everything else." And it shows here.

The challenge is to manage all the elements of this ecosystem in an even-handed way that protects economically important species such as commercial fisheries, while also protecting other important species such as marine mammals in general, and the Steller sea lion in particular.

We heard about managing fisheries yesterday, and I want to describe briefly some aspects of marine mammal management. Don mentioned the Endangered Species Act, and the Marine Mammal Protection Act. We also have other laws that are of interest regarding the conservation of Steller sea lions. The National Environmental Policy Act is one. This law requires all federal agencies to do certain things. Chief among these is the requirement to prepare detailed environmental impact statements on major federal actions significantly affecting the human environment. Included in these statements is a discussion of the adverse effects of the proposed action, and then the alternatives to that action. This law also requires agencies proposing actions to consult with other federal agencies having special expertise with respect to the impact involved. This means that any agency proposing to take an action affecting Steller sea lions must first consult with the National Marine Fisheries Service, which is the agency charged with management of the Steller sea lion under the law.

Later, we will hear more about pollution laws and about protected area laws. These, too, are useful tools in the conservation of Steller sea lions. In the US, the two main laws that are the primary legal tools for addressing the conservation of Steller sea lions are the Marine Mammal Protection Act and the Endangered Species Act.

In May, 1988, the National Marine Fisheries Service, the agency charged with management of the Steller lion, announced it was going to designate the Steller sea lion as "depleted" under the Marine Mammal Protection Act. This action would have allowed the National Marine Fisheries Service to regulate Native takings and incidental takings in commercial fisheries. No further action was taken on this

"depleted" designation, and shortly after the announcement, the Marine Mammal Protection Act was amended to allow incidental takings, even of depleted species.

I should point out that the Marine Mammal Protection Act also establishes the Marine Mammal Commission, and this commission is charged with reviewing the activities of government with respect to marine mammals and among other things to recommend steps to protect and conserve marine mammals. The commission has actively promoted the "depleted" designation.

The Endangered Species Act is the second of the two primary legal tools for the conservation of Steller sea lions. In November of 1989, a group of non-governmental organizations petitioned the Secretary of Commerce to make an emergency designation of the Steller sea lion as an endangered species. The Secretary responded with a "threatened" designation rather than "endangered."

He also took the following actions: he established a program of making monthly estimates of incidental take in commercial fisheries; stated an intent to increase enforcement of the ban on intentional killing of Steller sea lions; began to establish a recovery team to develop recommendations on further conservation measures; banned shooting near Steller sea lions, which is a means of protecting the fisheries; established buffer zones of three miles around certain rookeries or breeding areas; and established an incidental kill limit of 675 animals. The Secretary also stated that he may designate critical habitat and has asked for advice on whether the species should be permanently listed as "threatened" or as "endangered."

Through the National Marine Fisheries Service, the Secretary is carrying out the program of further research, attempting to gather more data on the causes of the decline and what can be done about it. The research is expected to take several years to complete. This situation with the Steller sea lions is an example of a conflict in management goals. The agency charged with conserving Steller sea lions also is charged with promoting the fisheries that many believe have led to the decline of the species. This agency, the National Marine Fisheries Service, has taken a "go slow" approach to the conservation of Steller sea lions. It has known of the ongoing decline of the Steller sea lion populations for 15 years. In 1986, it

held a workshop, at which evidence of the decline to less than 50 percent of the population in the late 1950's was presented. Yet it took two years for the agency to announce its proposal to designate the species as depleted, and then it did nothing.

Now, with evidence that the decline is accelerating, the National Marine Fisheries Service has announced a management program of monitoring incidental take, enforcement, and establishing a recovery team to recommend further measures. A program of cautious research is planned as well. In addition to these, further actions are both feasible and warranted. For example, changing the timing of fisheries could reduce incidental catch. In 1982, in the pollock fishery in Shelikof Strait, 82 percent of the sea lions caught incidentally were taken in April, while only 15 percent of the fish were taken in the month. Reducing the length of the fishing season could reduce the incidental catch. Similarly, most sea lions taken at fisheries are caught at night because the Steller sea lions are nocturnal feeders. Barring nighttime fishing could reduce the incidental catch as well.

Many other actions can be taken. Yesterday, we heard praise of ad hoc crisis management. True, genuine crises require this kind of management. The Steller sea lion situation, now a crisis, certainly requires it. But this problem did not sneak up on us. We've known it was happening for at least 15 years. We could have undertaken cautious, prudent measures to prevent the crisis. We didn't do it. We need to watch the Bering Sea and confront these problems as they develop.

Our two countries have a history of working together on the conservation of living resources. In particular, we have treaties on migratory birds, whales and polar bears. The former convention on northern fur seals was in some ways a model of international cooperation in research and management. The research on Steller sea lions conducted now by the two countries under Area 5 of the Agreement on Cooperation in the Area of Environmental Protection should continue. It is my hope that more cooperative activities, such as in the areas of fisheries management, especially in Steller sea lions, will be developed as well, and that we will jointly ensure that all the species of the Bering Sea, including the Steller sea lion, remain abundant forever.

QUESTIONS & ANSWERS

- Q** [By Don Mitchell.] I guess I have two questions. The first is, if I understood you correctly, and I don't want to put words in your mouth -- you indicated that the agency that is in charge of promoting fishery development, and the agency that is in charge of protecting marine mammals, is obviously the same government agency, that that agency knew for 15 years of this problem. Would I be correct in interpreting your remarks, that in your view, the agency purposely did not enforce the marine mammal law during that time period in order to advance its other goals?
- A** I think the agency was reluctant to use all the tools it had available to it, and it promoted the program of increased research to be sure of the problem. The same sort of thing happened with the North Pacific fur seals; I'm sure you well know. The decline was known for a long time, but nothing was done. I'm sure the political side of it had a lot to do with it.
- Q** Well, with all due respect, I'm not sure that's a direct answer to my question. But let me move onto to the second one, which really is the point. And that is, what would be your view on taking responsibility for marine mammal protection away from that particular agency and moving it into an agency that does not have this kind of conflict?
- A** I think there's probably pros and cons to it. Having a sort of multispecies responsibility can promote a more unified approach to management, and in fact, has a potential for actually streamlining and taking appropriate measures. I think the main concern is just striking the proper balance.
- Q** You do not see then, based upon this experience with Steller sea lions, any conflict of interest inside that agency with respect to these particular laws that they have to enforce?
- A** I do see a conflict; I think there is a very strong conflict. I'm not saying the conflict is necessarily bad, though. It has its negative effects, but we do have

competing resource uses, each of which is valid, and both of them seem to be balanced.

Q So, having an agency with a purposeful conflict of interest is not at all times bad?

A Right.

Q Okay.

Q Mr. Townsend, I was quite interested in your comment that the research would take many years. 1) Has that research been funded? 2) What would you expect, during a period of three to five years of this research for the population of Steller sea lions to look like at the end of that research?

A The research has been funded in a relatively small way. That's one of the reasons why it will take several years. The population has been declining at almost 9 percent a year for the last five years, so I think we can figure that that if it takes five years, maybe it'll drop by close to another 50 percent. That's why we would be promoting taking some actions right now, coming up with some testable hypotheses, and actually trying some tests right now, instead of just waiting for more data: going out and aggressively getting good management data right now and taking additional management steps.

Q [By James Brooks.] I would like to point out that 15 year ago we didn't have the Magnusson Act. We had no jurisdiction to speak of and essentially no information on what was happening in the commercial fisheries or the status of those stocks. We were fed a little bit of information on the status of ground fish through the INPFC, but it has only been in the last 12 or 13 years, by virtue of having observers on foreign vessels, (and more recently on domestic vessels) that we have recognized that the commercial fisheries might be a factor in the decline of fur seals. I don't think that everyone is convinced that the incidental take now in the commercial fisheries can account for the sharp decline, but it would be a mistake, I think, to dismiss commercial fisheries as an important item or factor, because sea lions do have

a tendency to be attracted to fishing vessels. We find them now all over the Bering Sea and the Gulf of Alaska. Wherever we have vessels, we have sea lions.

This may be a very unnatural phenomenon. It moves animals away from protected areas, natural feeding areas, and disrupts the whole temporal regime that has existed for a very, very long time, and they perhaps have not had time to adapt, or are not capable of not adjusting to this. While they may enjoy easy feeding in the presence of these fishing vessels for a short time, it may result in being in the wrong place to find adequate food at other times of the year. It certainly does expose them to a much higher level of predation by killer whales, which we know is probably more than an insignificant factor now.

As far as the conflict existing between the agencies' responsibilities for protecting marine mammals, and its responsibility for managing commercial fisheries, I want to acknowledge that potentially one could see that. On the other hand, the marine mammal scientists have not yet come forward with any recommendations to which the fishery managers could respond.

- A It may or not be a significant problem. I think that, as far as fisheries, the finger's being pointed primarily at the potential depletion of the food resources around the rookeries, for example. It's known that when fishing increases in the area of a rookery, the population of sea lions in the rookery decreases.

As far as predation, there is no evidence that predation is a problem, that there's more killer whales right now than there were say 10 or 15 years ago. And I also would say that I think it's not the responsibility of the scientist to come forward, but of the agency to charge its scientists with coming up with the information it needs to make management decisions.

- Q Yes, with respect to predation, however, I have to take note that when you have 250,000 or 300,000 sea lions out there, and a given number of killer whales preying on them, the effects of the predation might be very different

than would be the case when that sea lion population is reduced to 25,000 and the predation level remains the same numerically. The absolute number of sea lions lost would have a very different impact. I just think that, at this point, we should not dismiss any of these mortality factors. It may be that, at this level, any mortality factor becomes serious; that at other times it would be insignificant.

A I think that's a good point.

Q We heard the Soviet colleague called for the need for multi-disciplinary research. I'm sure it's going to be discussed at this forum, about the declines that are occurring with the fur seals, the murre, kittiwakes, cormorants. The harbor seals are also in a state of decline. In the sea lion research, when I attended the meeting about three or four weeks ago with regard to NMFS's plan for conducting this research, and there was no indication at that time that there was going to be any effort to approach it on a multi-disciplinary basis. Is there anyone that feels that this would be appropriate, considering that four of these species are in the same food web?

A I think that makes sense. There's, I think, a constraint of having the budget to conduct such a study. Certainly, as we say, everything is connected to everything, and it's a very important ecosystem. There's evidence of very broad problems with the ecosystem. I think that multi-disciplinary research would be appropriate.

LYUDIMILLA BOGOLOVSKAYA
USSR Severtzov Institute of Evolutionary
Animal Morphology and Ecology

First of all, for the Soviet participants, the sea lions are hunted not by killer whales, but by the mammal known as [man]. I'm very happy about the discussion that's taken place right before I'm to speak, because I like to talk about specific things. I've spent 13 years working in the area of the Bering Sea. And our expeditions are aimed at studying marine mammals and birds.

In the Soviet Union, there are two regions of special significance for the Native populations with respect to subsistence fishing and hunting. These are the White Sea of the Russian Pamur, and the Bering Sea of the Chukchi and the Eskimos. Both of these regions are regulated, not by these people themselves, but in accordance with our laws. All of their subsistence industry -- subsistence activities -- are regulated by the Ministry of Fisheries. That is, the people who are sitting in Moscow have more rights over the population of marine mammals than the Native inhabitants of the region. They are the ones who determine the benefits that the Native populations enjoy with respect to the marine mammals; they determine the size of the catch of fish.

Yesterday, we heard very interesting speeches by the US Fisheries Service representatives, and their reports were fairly narrow and very practical, and represented an anti-ecological approach. All the resources of ichthyal fauna were assessed and evaluated only from the human perspective, but not from the perspective of the natural food chains that exist in nature. This type of approach in our Barents Sea resulted in a sharp drop in fishing and did not take into account the interests of the Greenland seals which feed on the same fish that people eat, and resulted in a breaking of the food chain. When they did not find fish in their usual fishing grounds, the seals moved into the bays of northern Norway where the Norwegian coastal subsistence fishing had existed and been practiced for centuries. This subsistence fishing there was completely destroyed. The Norwegian government paid compensation to the fishermen. There were 150,000 seals that died in these fishermen's nets, and fishing in northern Norway was completely destroyed. People were forced to leave their homes and to leave the area.

I am very worried that this could happen in the northern part of the Bering Sea. It's well known that Eskimos and coastal people hunt walrus, the basis of their existence. In our waters -- and by this I only mean the Soviet side of this body of water -- in our waters the traditional subsistence industry on the coast has to compete with more powerful state fishing and hunting of the same animals.

I began working in 1977 and 1978 at the time of the peak population of walrus. Now, due to natural swings in the walrus population, coupled with the competition between the traditional subsistence fishing and state fishing and hunting, there is a large drop in the number of walrus in our waters. Right before I left to come here to Alaska, I received a telephone call from a traditional village which is called Sireniki and the hunters told me, "Thank God the walrus is running." It should be pointed out that the whole existence of this village of Sireniki depends on walrus hunting because there are almost no seals in the area.

There are several rookeries located on the Chukchi Peninsula. The largest one is the island of Arakamchechen. In 1977 and 1978, there were up to 50,000 walrus located there. In one part of the rookery in 1980 there was a stretch of walrus that was two kilometers long. These were almost all males. In 1987, when we were making our last large expedition along the coast, there were only 1500 walrus at this rookery at that time. But the walrus began to appear in the Karagaian Peninsula in the northern part of Kamchatka and they could be found in areas where they had earlier not been found. This tells us that walrus are encroaching on the state industry because the state engages in its fishing and hunting in the early spring when the walrus are mating. The government has large fishing vessels and hunting vessels. And as it turned out, near the Chukchi Coast, right around the village that I mentioned, the Village of Sireniki and the Kresta Gulf, this is where our Chukchi population of walrus is located and where they breed.

I'd like to draw a few conclusions from this and propose them for discussion. The first is that in the Soviet Union there should be a differentiated right to the hunting of marine mammals, depending on whether they are the means of existence or whether they are hunted as a commercial industry. The second: it's necessary to come up with an equal use limit on the population of walrus. What we have is

over-hunting in certain areas and insufficient hunting in others. It is very important for any living animals that the hunting not be totally constant, but be intermittent and in accordance with the natural swings in the population. I don't know how it is in the United States, but in our country the hunting of walrus can only increase, and then we have an ecological disaster just as was in the Barents Sea. For a certain time, everything comes to a halt, and then everything starts over again.

The history of the walrus in the Soviet part in the Bering Sea and the Bering Strait, is that in the last century, when whaling decimated the population of the bowhead whale, American whalers began to actively decimate the walrus. They took from them their tusks and their skins. Then when the state borders were being established, this active decimation of the bowhead and walrus resources resulted in a terrible famine in the Chukchi Peninsula. During one of these famines, which was fatal for the entire Eskimo people, part of the Chaplain Eskimos (this was in 1881) immigrated to St. Lawrence Island. So, this has led to us having friendly relations with the Eskimos. From St. Lawrence Island, some of the Eskimos migrated to mainland Alaska, but these Eskimos did preserve a clear understanding of their Native traditions and where they came from as well as a desire to reunite.

In the 1920's, there were again famines. The Eskimos from the southern shore of the Chukchi Peninsula hunted walrus in the Chukchi Sea. The situation again became stable somewhat, because commercial hunting in the area went down. Again, the whole cycle repeated itself. And in the 1970's, there were very few walrus in the area. Then, as a result of a total prohibition of commercial hunting in our waters, things went better for the walrus and walrus hunting became just a normal activity in all the villages of the Chukchi Peninsula.

And immediately, the Ministry of Fisheries began to resume its hunting activities. Joint estimates of the walrus population undertaken by the Ministry of Fisheries and US specialists indicated that the overall numbers of walrus is about 300,000. But I think that, in reality, this is not the case. We have checked, and this shows that the specialists of the Ministry of Fisheries are inflating the figures in order to allow their ministry a chance to survive.

At first the hunting was carried out on an experimental basis: 1,000 walrus per year. But the hunting did not focus just on males, but on the reproducing part of the population, the females. By the end of the 1980's this had again resulted in a great decrease in the walrus population. I believe that we need to think about legal protection for marine mammals, taking into account their populations. Of course, in order to do this we need data, and we have very little data because marine mammals are animals that migrate over long distances.

We need the efforts and the cooperation of all of us. As you know, on Wrangel Island there is a huge breeding ground where female walrus come with their young. This area needs to be protected because the authorities are trying to open it up for hunting, saying that this is required by the interests of the Native population because they don't have enough walrus.

DR. BUD FAY

Commissioner, Marine Mammal Commission

I just wanted to report a few things that I do as a scientist, not as a commissioner. I've been involved in studies of marine mammals in the Bering Sea for almost 40 years now and recently returned from two meetings in Seattle which have considerable amount of bearing on this one. The first was a workshop on the ecology and management of walruses, and the second was the 10th regular meeting of the marine mammal working group under the agreement between the USA and the USSR in the area of environmental protection. In both of those meetings, we had long discussions on the present accomplishments and current problems in the area of management and conservation of Bering Sea marine mammals.

First, a major problem that we recognize -- and it's already recognized by everyone here, I'm sure -- is that we have in the Bering Sea a number of marine mammal populations including walruses and a number of different kinds of seals, and in the Chukchi Sea as well. These are populations that circulate back and forth between the Bering and the Chukchi. These are large populations of animals that migrate in and out of our waters, and the Soviet waters, and spend a large part of their time right in the middle on the boundary. It's at present a problem because we are managing these resources independently, unilaterally, and not really communicating well enough on them. We need to have mutual joint management based on the results of research on both sides.

Management cannot take place without research. There has to be monitoring of, not only the animals themselves, but their total environment to the extent possible. As a minimum, the participants in the walrus workshop and the marine mammal working group concluded, we need to have something like annual monitoring of the walrus population, or certain types of information, particularly the size, age, and sex composition of the catch. There is some effort on both sides to acquire that information now, but not enough.

We need to monitor the productivity of the population and the survival of the young that are produced. We do that to a certain degree now, but it's not enough. We need to monitor the physical condition of the animals, their fatness

and their general health. We do that intermittently, but not very thoroughly. We need occasionally to monitor the population's size and its composition. We also do that occasionally, and we're improving in our methods. The estimate of population sizes are now done jointly by the Soviet Union and the United States, and the results are improving, but still need to be better. We have no way, at the moment for estimating composition of the population in terms of age and sex.

We need to know more about the food supply, particularly. There have been indications in recent years that the food supply is not as good as it was before. We don't know how good it should be; we don't know how bad it can be before it affects the population itself. We think the population has been affected already. We don't have good ways to measure the food supply and assess its quality and quantity.

We need to learn more about description of habitats of walruses and the other marine mammals. We know they occupy the ice during much of the year; we know they occupy certain locations on shore, but we don't have an adequate understanding of those. We don't know which ones need to be protected and which ones do not unless the animals themselves are right there on them.

It's quite apparent that the number of haul out areas for walruses is small and that they need to have some alternate haul out areas in the event that one area is not suitable in a particular year. They need to be able to go somewhere else. We don't know how to identify those places.

Finally, the problem that we recognized in both meetings was that we need better communication and better long-range planning. The only way that this seems to be feasible is through some kind of international agreement that requires both countries to get together to discuss their research results, the research plans, to coordinate their activities in the future, and to develop mutual long-range plans for management of the resources.

In the marine mammal working group, for at least 10 years or maybe longer, we have repeatedly recommended to our respective governments the desirability of having some sort of international agreement that would allow joint research and

management of the marine mammals of the Bering-Chukchi system. So far, that's been ignored, as far as we can tell, completely. It's high time we started something like that. Perhaps it should be more comprehensive, take in more of the resources. Certainly the direction for the future is into management of the whole environment, the whole ecosystem insofar as we can. All these organisms, the marine mammals, the fishes, the bottom fauna, all interact in some ways, which to us at the moment are fairly mysterious. We need to determine what those ways are, and we need to manage our natural resources there jointly and with respect for the entire ecosystem.



**Eskimo hunters haul a seal kill in Cape Krusenstern National Monument, Alaska.
Photo by Robert Belous, National Park Service.**

JIM MAGDANZ

Subsistence Specialist, Alaska Department of Fish & Game

Today I will discuss the subsistence economy of northwest Alaska. I will use two Seward Peninsula communities as examples: 1) Brevig Mission and 2) Shishmaref. But first I would like to discuss northwest Alaska in general. My research for the Department of Fish & Game has been primarily in northwest Alaska, but the activities and conditions I describe occur throughout the Bering Sea.

There are about 35 communities in northwest Alaska. Golovin is one of the communities in our 1989 harvest study. Communities like Golovin depend primarily on subsistence harvest of wild foods and a few government jobs. It has grown from about 4,800 to about 15,400 in 1980. Northwest Alaska has grown relatively slowly compared with the rest of the State. The 1980 population of northwest Alaska was about the same size as Native populations at contact. The population of northwest Alaska is almost exclusively Inupiat Eskimo. Although the technology of harvesting has changed somewhat during the last century, the foods used, the processing methods, and the social organization of production are still quite traditional.

In 1989, the Division of Subsistence in the US Fish & Wildlife Service conducted harvest surveys in several Seward Peninsula communities including Brevig Mission and Shishmaref. Brevig Mission was founded in 1892 when the pioneer missionary Sheldon Jackson landed here with Chukchi reindeer to begin an Alaska reindeer industry. The population in 1989 was about 172. Brevig Mission residents harvested an estimated 579 pounds of wild food per person in 1989. Fifty-six percent of that was marine mammals, 20 percent was salmon, and the remainder was other resources. The largest proportion of that harvest of walrus with 191 pounds per person. I should mention that ice conditions were poor in 1989 and normally bearded seal would comprise a larger portion of the harvest. In 1989, the average per-capita bearded seal harvest was 59 pounds.

Shishmaref, with 438 people, is one of the larger northwest Alaska communities. It has two substantial reindeer herds, but still depends heavily on wild foods, especially marine mammals. Marine mammals comprise 69 percent of the

wild food harvested. Terrestrial mammals, moose, and caribou comprise about 15 percent. Bearded seal comprise the largest portion; 158 pounds per person followed by walrus with 134 pounds.

The communities of northwest Alaska are typified by subsistence. There is a domestic economy with production by family groups for mostly local consumption. Every spring, more than half of the residents of Brevig Mission move to camps where they remain for up to six weeks hunting water fowl, fishing for white fish, and hunting marine mammals.

The harvest of bearded seals is the primary goal of spring camping. The walrus are secondary. Ringed seals, ribbon seals, and polar bear are also taken when encountered. The hunters use small 18 foot aluminum boats with outboard motors. They hunt in family groups, usually fathers, sons, brothers, uncles and male cousins. This is a very traditional way of organizing production. They range as far as 100 miles from Brevig Mission, frequently hunting in the Bering Strait. The same waters are used by hunters from Teller, Wales, Little Diomedea, Shishmaref, King Island, Gamble, Savoonga, and Nome. The food is processed by women, almost always the wives and daughters of the hunters. Bearded seal meat is air dried and stored in seal oil. Walrus is stored in underground pits where it ferments.

The people of northwest Alaska are a modern people with ancient roots. They have adapted to change, like CB radios and outboard motors, but suffered considerable disruption in the process. During the last two centuries, control of their lands and resources have been assumed by distant governments. They're striving to regain some of that control, and to that end, Alaskans have organized the Alaska Eskimo Whaling Commission, the Eskimo Walrus Commission, and more recently the Beluga Commission.

Most northwest Alaskans could not afford to replace wild food with food from the grocery market. Not only are incomes low, the cost of living is extremely high. The cost of living in Nome is 33 percent higher than in Anchorage, yet the per capita income in Nome is almost half that of Anchorage.

Wild foods are essential in northwest Alaska for both economic and nutritional reasons. But more than that, the harvest, production, and consumption of wild foods form the cultural fabric of northwest Alaska. The quality of northwest Alaskan's lives depends on dependable access to wild foods. I trust that their needs and their interests will be in the forefront of our discussions today.

VICTOR NAUMOV

Magadan Oblast Committee on Nature Protection

As part of the matter of the US-Soviet agreement on environmental protection, I wanted to say a few things about the current condition of traditional subsistence hunting in the Bering Sea area. Dr. Bogolovskaya, shortly before me, talked about the condition of the marine species and their relation to the Native population. I'm going to look at something a little bit different, and that is marine subsistence fishing and its effect on traditional lifestyles. For the Native populations of Chukotka, subsistence fishing, along with raising reindeer, was an essential source of its subsistence.

[Editor's Note: Due to an operator's error a portion of this presentation was not recorded and consequently was not transcribed.]

What's the role of traditional hunting in the life of the Native population of the Chukotskiy Peninsula today? While the territory of the northeast of the Soviet Union was being developed, the contribution made by sea hunting was considerably reduced. But if you look at the question of employment and food procurement for the Native population, that population which lives in small settlements on the seashore of the Chukchi Peninsula, you will see that its role is still considerable.

On the basis of information provided by the Soviets of the Chukotskiy and Provideniya districts -- those are the administrative units which include the shores of the Bering Strait -- the overwhelming majority of the Native population is united in six state reindeer farms within the frame of which marine mammal hunting is also organized. Sea hunting is conducted by 37 individual work units which include 221 hunters, which is about 12 percent of the total population working in agriculture on the Peninsula -- not only the Native population, but all people. Marine mammal hunters are basically representatives of the Native populations.

The hunting of marine mammals is regulated based on the recommendations of the Pacific Institute of Fishing and Oceanography. But as Dr. Bogolovskaya mentioned, this institute reflects the interests of Ministry of Fisheries of which it is

a part. On the basis of information provided by the Institute, limits on killing of marine mammals are established, based on individual species. On the basis of this data, the hunting quota of marine mammals is established by the state farms.

The hunters are not allowed to exceed the allowed limits. Basically six types of marine mammals are hunted. These are the ringed seal, the ice-loving harbor seal, the bearded seal, the walrus, and to a lesser degree, beluga whales and ribbon seals. It should be noted that the limits were never reached, let alone exceeded. Let me give some figures to illustrate this. The least hunted mammal in Chukotka is the beluga whale. In the last years, 10 to 20 individuals have been hunted. You probably remember there was an incident where beluga whales were trapped in ice. The 2,000 animals were blocked, and not having enough air and food, permission was given to kill 900 of the animals in order to let the others survive until the ice breakers arrived. Actually, only 580 were shot. But I think these losses will be replaced.

The ringed seal is the most intensely hunted marine mammal. The limit has grown in the last 10 years by almost three times. This also supports what Dr. Bogolovskaya said. The limit for hunting marine mammals grows from year to year. For traditional subsistence hunting, the limit is 6,000. All throughout these years, the limit for the ring seal was not reached by 18 percent to 30 percent.

I'm not going to mention data on hunting other types of mammals, but those who are interested could ask questions during the question and answer period.

Regarding the subsistence hunting of the whale, it hasn't taken place for the past 20 years. There are many reasons, but the basic reason is the lack of proper equipment for the hunt. The most stable hunting is affected in the state farms of the Chukotskiy region, especially the Lenin State Farm where all the limits are fully absorbed; that is the one state farm which conducts hunting on a very intensive basis. The reason is a better developed processing capability.

In this farm there is a well developed process of skinning and tanning. This makes it possible for the Native populations or members of the state farms to get extra income. Other state farms submit the untanned raw skins to state

enterprises. In all state farms there is this same structure for use of marine mammals. About 10 percent of the meat is used by the Native population. The rest of the fat is processed and the rest of the meat is also used for food for fur bearing animal farms. The raising of fur bearing animals in captivity, along with marine hunting, fishing, and reindeer breeding, is the basic source of employment and profit for the populations of these settlements.

In addition, they have sewing factories and they are now being more fully developed. There's a growing demand for ivory carvings, and they don't have any possibility of satisfying that demand at this point, so great is the demand, in fact. Tanning and ivory carving is now being widely developed, taking into consideration the large numbers of carvers and people engaged in fur tanning, we can say that marine mammal related work takes up 20 percent to 25 percent of the workforce of the adult working population. Basically, these are Native people.

The economic development of the region and the expansion of international activities and the impact of human activity on the balance of nature, which was mentioned before, make it more difficult to conserve the habitats of marine mammals in Chukotka. There was an incident on October 13, 1989. A helicopter flew at low altitude over a walrus rookery. As a result, 361 animals perished.

Regarding the creation of an international "protected territory" in the Bering Strait region, I think that the joint cooperative activities of the United States and the Soviet Union in this area will benefit both of our peoples. It will also serve to ensure the survival of the Native populations as well as the animal life of the region. And I think we should continue working in this respect.

The population of Chukotka and the regional government of Chukotka are interested in the creation of an international commission on the walrus.

JOHN ROGERS
Deputy Regional Director
U.S. Fish and Wildlife Service, Alaska Region

In the interest of brevity and to make the few points that I had planned to make here, and to avoid duplication, I will leap around (I hope with some agility and grace) among the number of points I wanted to make so that they get on the floor. If they're worth discussing further, we can do that at the start of the discussion period.

Subsistence. In the context that I can discuss it, that is the responsibilities of our agency, really focuses in this, because of the nature of this panel on walrus; subsistence and management also within that context are pretty well inextricably intertwined.

As opposed to the situation in the Soviet Union as we have just heard, take of walrus for subsistence or any purposes is limited to subsistence take by Native peoples as long as it is in a non-wasteful manner. Also, in differentiating between the situation in both countries, there is no restriction. At this point, there is no mechanism to make restrictions on that take by the Native peoples for subsistence purposes as long as that take is not wasteful.

That leaves us somewhat frustrated, as a resource management agency, because we lack the authority to implement any management actions short of an ability to declare the populations of interest -- in this case walrus -- to be depleted. Thus, in the absence of the restraint that the subsistence users have heretofore shown, management of walrus in this case is not an issue because none can take place.

There are two issues coming to the forefront that relate to subsistence use of walrus that bear mentioning. The first is the growing recognition that certain contaminants, notably heavy metals (cadmium and mercury) are beginning to appear in substantial levels in walrus tissues. That is of concern from two respects. The first is that we have no idea at this point what the immediate impacts on walrus themselves are, and we do not have any indication or any knowledge right now of the impact of those elevated levels of heavy metals on the subsistence users and

consumers of that flesh. That is an issue that really cries out for cooperative work in our two countries. It is a shared resource; we do not know where the contaminants are coming from; and the Native peoples of both nations are potentially being affected by those contaminants.

The second issue is one for which we can't yet determine the real import. It has certainly been in the newspapers and in the media, and has raised some concerns. That is the growing allegations that some elements of the Alaskan community are hunting walrus solely for the ivory. As I said, right now, the evidence for such is a few isolated cases that were prosecutable over the last few years, a number of headless carcasses washed up on Alaskan shores, and wide-spread allegations from people in the Lower 48 who are not intimately concerned with walrus management.

Right now what needs to be done is -- the agencies responsible in this case would be U.S. Fish and Wildlife Service and the Alaska Department of Fish and Game -- to increase our efforts to document the extent to which it occurs, and if it turns out to be a wide-spread issue, we need to identify the sources; the individuals who are carrying out those activities and try to eliminate the practice.

As we all know, the recent ban on traffic in elephant ivory has increased and may continue to increase the pressure on walrus populations for walrus ivory, and to the extent that that pressure manifests itself in illegal activities, we need to stop it. It is not now, as some would like, an opportunity to indict the Native subsistence community for that take. First of all as I said, we have no evidence it's wide-spread, nor is it a legitimate subsistence activity, so legitimate subsistence users could not be identified as the perpetrators of such instances. At any rate, it is not something that we are investigating in the research and well as the legal mechanisms.

I'd like to very briefly emphasize a couple of points that Bud Fay made in terms of management. The last few years the cooperation between our two nations has been gratifying and will come to fruition this fall with the conduct of the first truly cooperative survey of the walrus population using shared personnel, logistical, and financial resources. It should finally give us a good handle on the

size of the walrus population. We view this as a critical juncture and critical event in future management; we hope that such a survey will be continued; we'd like to see the interval of that survey decreased, that is so that it could be conducted more frequently. We also support, as Bud mentioned, a cooperative harvest survey, using common data and common methods so that we can look at such things as the level of harvest; the sex and age composition of that harvest; and the distribution of the harvest.

Habitat protection needs are probably, in the Bering Sea at this point, really not a great big issue. Oil and gas exploration and production in the Chukchi Sea do concern us. But in terms of the Bering Sea, habitat protection has not yet raised its head as a major issue in the Bering Sea.

I guess finally I would like to emphasize that we believe that in order to truly manage this shared resource two things are necessary: 1) an international mechanism, as has been mentioned here, to truly develop a management plan for the share of walrus population, and then finally 2) within the United States, some authority to conduct management actions on walrus short of a declaration of depletion.

DON MITCHELL

***Attorney
(Former Director of Alaska Federation of Natives)***

[Editor's Note: Due to an operator's error, the initial portion of this presentation was not recorded and consequently was not transcribed.]

. . . Alaska Natives as a group have always indicated to me that they expect three things from the government with respect to marine mammals. The first is that they expect government to take action to insure that marine mammal populations stay healthy; second, they expect the government to treat them with respect; third, they want to be left alone. It is interesting listening to some of the Soviet participants earlier, that with respect to the achievement of two if not all three of those goals, it sounds like marine mammal management, as it relates to Native people in the Soviet Union, is in many ways working as poorly as marine mammal management is with respect to Alaska Natives here in the United States.

I think scientists and government officials have a very strong common interest in their dislike of attorneys. The reason for that is that the role of lawyers in these systems is to make both scientists and government officials account, in public, for the reasons that they make decisions, in terms of implementing laws that can have a very serious effect on the lives of people who otherwise cannot defend themselves from those actions.

And it is interesting to hear for two days a number of speakers tell us that, when you cut through their scientific vocabulary, that basically nobody knows much of anything about resources in the Bering Sea. But, nevertheless, the minute that scientific information is used to justify political decisions with respect to controlling the behavior of Alaska Natives or other people, suddenly it is viewed as "impertinent" to challenge the validity of inferences drawn from data that, in other context, scientists will freely admit among themselves are inadequate.

Now, the reason that all of this is so unpleasant is that there is a mythology in our country that, in the United States, we live under the rule of law and not of men; that everyone, whether they are government officials or whether they are

Eskimo walrus hunters, are to conform their behavior to standards that are written down in words on pieces of paper, and that those words have been put on those pieces of paper through a process that is both fair and knowledgeable. Anyone who has any experience with respect to that process in our country knows that myth cannot be further from the truth.

The Marine Mammal Act, in my judgment, is an excellent example of the situation. That law was passed in 1972, which was an election year for the President of the United States. It was a time in which there was a very heightened sense of environmental consciousness in our country. And if you read the debates that took place in our National Congress, you will find that, of the 535 members of our national legislature, probably only (I haven't counted it recently), say, 20 even spoke during that debate; and I would be willing to bet that most of the people that were members of our National Congress, that voted for this legislation, never read it and probably, if they had had to take a test before voting to indicate whether they understood it, they would not have passed.

A good example is a word or a phrase in this legislation, which Mr. Baur talked about earlier, called "optimum sustainable population" or what's known in the trade as "OSP". That is supposed to be the objective legal standard that controls whether or not agencies can take certain actions to allow people to do damage to individual marine mammals. I would be willing to bet that, at the time, they voted for this legislation, probably 99 percent of the 535 members of Congress, if you had mentioned the words "optimum sustainable population" to them, would not have had a clue as to what it meant, or that it was even in the bill.

What that means is that in defining that very important term and in applying that definition to the lives of individual people, that responsibility has been abdicated by our National Legislature to government agencies.

Now, Don Baur told you earlier that a rule of thumb is that optimum sustainable population is supposed to mean a number of animals that are 60 percent of the number of animals that can be carried at the maximum range of a particular habitat. We are not supposed to be implementing laws in our country based upon rules of thumb. I have had biologists, under oath, tell me that with respect to the

Pribilof Islands fur seal population, that OSP does in fact mean what Mr. Baur told you, but that with respect to the fur seal population on your Commander Islands, that it meant something entirely different. There it meant that even though that population would flunk the 60 percent test, so long as there were additional pups being born at a certain rate, that that's in fact what Congress intended.

Well, obviously what that situation demonstrates is that, in terms of whether Alaska Natives or other people are or are not to conform their behavior to certain decisions based on OSP, their behavior and their opportunities are directly controlled by what that particular individual believes in that particular political context with respect to the goals of the agency that he works for at the time -- that that's what it means. That is not a rule of law; that is a rule of men, men that unfortunately can be capricious and unfortunately are not accountable to the people that in this whole process, in my view, are the least capable of defending themselves from that kind of action, which are the people out in the villages.

Another example is what you just heard from the representative of our U.S. Fish & Wildlife Service who did not mention that, in addition to allowing Alaska Natives to hunt for subsistence, in other words to hunt for food, that Congress, this National Legislature that didn't read the law, also put in a separate authorization to allow walrus and other hunters to hunt for the purpose, not of subsistence, but to hunt for the purpose of acquiring ivory and other body parts to make handicrafts; to put those handicrafts into the stream of commerce to acquire money to buy the kinds of things that are no longer luxuries, but are necessities in Native villages; heating oil, some store-bought food, clothes not made out of skins, all of the things that the same government, for which that agency works, has encouraged them for over 150 years to want to acquire.

That agency has never liked the decision that Congress made in that regard, and has done, with all due respect, everything possible since 1972 to write that very important policy decision out of the law. No one elected these people, and in our system of government they are supposed to be implementing policy decisions that are made by people that are elected. No one asked them to like the decisions made by people that are elected to make decisions. That, sadly, is not in my view how it has worked out. I believe that probably things are going to be worse; that

what has occurred with the Marine Mammal Act is that, in 1972, Congress really didn't have the slightest idea in the details what it was doing. What we have seen since that time is that every time a segment of our economy finds itself inconvenienced by the major policy decision Congress made, it hires its attorneys and its lobbyists, and it uses its campaign contributions that are given to people that are elected to office, and they go and carve out exceptions for themselves from the general rule that marine mammals should be protected. We saw it 1981 with domestic commercial fishermen; we saw it in '85 or '86 with the oil industry wanting not to be inconvenienced in terms of whales; we saw it again in 1988 with more commercial fishing. You will see it when hardrock mining comes to the sea bed, when more oil and gas gets into the Navarin Basin and Bristol Bay and elsewhere. As the Marine Mammal Act and the achievement of the goals of that Act in 1972 become inconvenient, the segments of our economy that, unlike Alaska Natives who cannot defend themselves and their economic interest, you will see further and further erosion, in my judgment, of the legal standards that are presently in the Act. I believe there is probably a good, dismal note to leave my you with on this -- that you will see that process as it has been in the past, aided and abetted by the agencies charged with implementing the law.

And without debating it again, I think that it is impossible for a reasonable objective person, who is knowledgeable of even the most basic facts, to conclude other than that since the Act has been passed, the National Marine Fisheries Service has actively attempted to not enforce the Act to the extent that it would inconvenience fishermen that have been either taking food from, or literally entangling, and in some cases shooting, Steller sea lions. But I do not believe that Steller sea lions are an exception. They're merely a unique opportunity for even the most casual observer to glimpse at the tensions inside the system of decision-making that has going on with respect to Bering Sea resources in the past and, sadly, in my view, can be expected with reasonable likelihood to continue in the future. There's some food for thought.

QUESTIONS & ANSWERS

- Q** [By Harold Sparck] Dr. Rogers, I was quite interested in your comments, representing the Fish & Wildlife Service, that you saw no big issue in regard to habitat in walrus. Could you explain that position?
- A** No. What I said is: there are some very real current problems in the Chukchi Sea that we've got to confront ourselves with, to deal with oil and gas exploration and in production. At present, it doesn't seem to be an imminent problem in the Bering Sea, though as was explained later on, some of the proposals and expanded proposals for either mining in and around the Bering Sea and oil and gas exploration may make it a much more pressing issue. So, I don't mean to diminish habitat issues in the Bering Sea.
- Q** Dr. Rogers, I'd be quite interested, since I'm very familiar with the Mineral Management Service's development plans for the Eastern Bering Sea Shelf, what the position of the Fish & Wildlife Service will be in regard to habitat conservation and monitoring of off-shore oil development?
- A** It's our responsibility, in review of leasing plans and then potential environmental statements, to take migratory birds, and in this case walrus, both habitat and impacts on individuals, into account in formulating a specific position. So, in the absence of specific developmental proposals, we have concerns, and we will be expressing those concerns as they're manifested through any kind of particular proposed action.
- Q** [By Harold Sparck] I've got one more question. Has there been any allocation of funding or stationing of personnel who were specifically assigned to deal with this issue, or is it being handled by the general line agency there?
- A** Our actions will be taken through the agency as it presently exists. We have offices -- in this case, the Anchorage Field Office would be responsible for leading our review. We do not have a special, and more than likely, will not have a special segment of the organization created to deal with Bering Sea issues, as I see it right now.

Q [By John Oscar] I'm John Oscar; I'm with the Coastal Management District in Bethel. We represent over 40,000 square miles and 18,000 Natives. My question is specific to walrus. You mentioned that there is a lot of activity going on with regard to ivory takes; carcasses there with their heads missing. That to me sounds like all the Natives out there on the coast are poachers. I would like some clarification on that. And in regard to how your education and information is being handled: the only source of information and education I see as far as Fish & Wildlife Service being involved in communication with villages are posters -- in a post office or at the store. And that's about it.

The main Native concern out there is that the U.S. Fish & Wildlife Service has always overlooked the Natives, and that they're in the way of its laws; laws that ignore rights of rural villages; decisions that are made with inadequate information. The question of communication has always been the problem with the agency, and many of the villages out there are always concerned about decisions that are made behind the desk. Those decisions that are made behind the desk may not be familiar with how the village is structured. The main problem that has always occurred is the agency's lack of communication in cooperating with them to develop its laws and decisions that are to be made. That's the main stigma that the communities have with the Fish & Wildlife Service.

I would like to hear what your objectives are in terms of developing a cooperative management with regard to walrus and other subjects of interest that would impact the communities as a whole.

A First, it was not my intent, nor is it the intent of our agency, to characterize every Native as a poacher; nor is it our intent to characterize legitimate use of walrus by Natives, whether it be for consumption of the flesh or for creation of handicrafts as something that shouldn't happen. In the interest of brevity, I cut out some of the things that I wanted to say about that so-called headless walrus issue. Our major concern arises from the outside influence on the Native community that can cause harvest and trade of raw ivory for such things as drugs and alcohol. Legitimate use or legitimate harvest for

handicraft purposes is within the Act and, as far as we're concerned, are the right of the Native people. Second, we are committed and have been working with the Eskimo Walrus Commission to develop cooperative walrus management plans. We intend to keep that up and expand it into other species and other concerns. I can confess to an historic lack of communication, and probably lack of sensitivity on the part of our agency in the past toward Native concerns. There it sits. I can't do anything about the past. It's our intent in the future to do a better job. We've been working, as you probably know, being from Bethel, very closely with the Native community on the Yukon Delta Waterfowl Management -- or Goose Management Plan. That exemplifies what I would like to think as the best kind of relationships and the best kinds of communication, at least, that we can have on an issue, whether the outcome be what either one of us would like. So, we have confessed to past faults, we're hopeful to be better in the future.

Q [By Don Mitchell] Just to clarify that, since the issue was raised publicly. Then, is your allegation that ivory that has been taken lawfully is, in the opinion of the Agency, unlawfully going into commerce, and that it is going in in a raw state, or is your first statement correct: that it is the allegation of your agency that ivory is being harvested unlawfully?

A It is not my allegation. Allegations . . .

Q You made it . . .

A . . . allegations have been made, that it is the responsibility of our agency to pursue. The allegation that has been made that walrus are being harvested illegally, and raw ivory is being traded illegally. And I would hasten to add, and have emphasized it in the past, that right now, any evidence is anecdotal and not wide-spread. And we don't want any kind of statements made on this issue to serve as any sort of indictment of the Native community as a whole.

Q Okay. Then, is the purported unlawful taking of walrus an unlawful taking in that, in the view of the Agency, walrus are being killed and an inadequate

amount of meat is being salvaged from the animal, and that makes the taking unlawful. Is that the heart of the matter here?

A I don't want to get hung up on semantics, but it is our feeling that, if the ivory is traded in the raw state, then that is probably the illegal action. I'm . . .

Q That's now what you just stated . . .

A Well, there can be arguments and will be arguments about how much meat needs to or needs not to be salvaged.

Q Well, without belaboring it, I'm attempting to find out what the Agency says the situation is. And I thought you just told me a moment ago that the situation was that, in addition to putting raw ivory into trade, that it was your representation to this group that there were unlawful takings occurring. And I'm trying to figure out why in fact your agency believes that the takings are unlawful.

A Our responsibility, and what I was merely to report, is that we are investigating allegations that have been made to us of either unlawful take or unlawful trade. That's, I guess, where I can leave it.

Q [By Charles Degnan:] My name is Charles Degnan, and I'm from Unalakleet, Alaska. My father's name is Frank Degnan. I was brought up on subsistence lifestyle; and I was also educated here at the University of Alaska. I would like to welcome the Soviet Delegation to my country, and also the U.S. Delegation. I was born Eskimo. Our people depend on subsistence as a way of life. It has not changed much for as long as our people can remember; only the methods have improved based on technology. One of the things I am concerned about how our national governments and the international community views subsistence hunting and fishing and use of natural resources.

I would prefer that local Native groups and local people be the determining factor as to the definition of subsistence use and of natural resources. It is

very difficult for Native people and even myself to understand how people who do not depend on subsistence hunting and fishing, how they can regulate it, not having the experience and having to live with it. There is much insensitivity of people who are in government, because they do not experience the use and the dependence on natural resources as Alaska Native people do.

Historically, Alaska Native people have welcomed other peoples to their area, and viewed differently the use of natural resources than the dominant societies and the dominant powers do now. I realize we're going through many changes, and it would be helpful to Alaska Natives for them to be able to live their life as they see that they should live, it without intrusions of dominant society values on them. I hope in your deliberations; at your levels -- the national level and the regional levels -- that you consider seriously and give due deference to local people's expertise who are primarily Alaska Natives in our area.

Q [By Victor Naumov] The American side said that walrus hunting -- subsistence hunting is unlimited. You were saying that the Native population has the right to shoot as many walruses as they consider necessary. And what is the yearly yield of walrus hunting on an annual basis?

A I can give you some estimates of harvest. In Gamble and Savoonga, for example, which are two of the most productive walrus hunting villages, the harvest runs between 300 and 500 animals annually. Little Diomed Island is in the same range; some of the other communities, Brevig Mission, which I showed you this morning, harvest one-third or one-fourth of that; 100 or 150 animals a year at maximum. I don't have, at the tip of my tongue, a total harvest number for the Bering Sea for walrus, but I can certainly get it for you if you'd like that.



Polar bear hide drying at Shishmaref, Alaska. Photo by Paul Haertel, National Park Service.

INTRODUCTION OF GOVERNOR COWPER

DAVID STRUHS

Executive Director, President's Council on Environmental Quality

My name is David Struhs, Executive Director of the President's Council on Environmental Quality. I have the privilege of introducing our lunch speaker this afternoon. I spoke to you last night about perceptions of Alaska through history, perceptions that were shaped by strong leaders; Cook, Seward, Macksetoff, Lindberg.

[Editor's Note: Due to an operator's error, part of this presentation was not recorded and consequently was not transcribed.]

. . . Governor's Cowper's vision for Alaska, not only with Alaskans but with the world. He has been described as the kind of governor you'd expect to find in Alaska; no-nonsense, down-to-earth and slightly salty, just what's needed to melt the ice curtain between Alaska and the Soviet Union. It's no surprise that Governor Cowper was on board that first friendship flight to Providenya. He helped organize it, and he has been working ever since to build and promote the economic stability of the north star flag in a time zone half way between Washington and Tokyo, and it's paid off.

Alaska's exports to Pacific Rim countries have grown by more than 64 percent since 1986. I might add, from personal experience, that this economic growth is not achieved with disregard to the environment. Governor Cowper has one of the strongest staff offices in Washington D.C., and they regularly raise Alaska's environmental concerns to our attention and to the attention of the Congress.

Steve Cowper was running at the track -- the stadium -- one day, when a gruff maintenance worker called down to him from the stands and told him to come up and see him right away. He was installing speakers for an event that evening and needed help moving the equipment into place. He gave the governor his work orders, and the governor got to work, spending a considerable amount of time helping this state employee do his job. When they were about finished, the

unsuspecting employee asked, "You look kind of familiar, have I seen you somewhere before?"

Well, that's how Alaskans are; not much for pretense, just good solid, honest hard-working people, people with a vision of working together to achieve great things for a great state. That's the kind of governor they have in Steve Cowper.

It's a privilege to introduce the Governor of the State of Alaska.

LUNCHEON ADDRESS

THE HONORABLE STEVE COWPER GOVERNOR OF ALASKA

That was a very kind introduction. If you'd want to put it down in writing and send it to the press, we could probably arrange that.

Ms. Bear, Professor Kolbosov, Soviet friends, American colleagues, and fellow Alaskans:

As the governor of the only state from which a person can walk to the Soviet Union -- though I don't recommend it -- I'd like to welcome you to Fairbanks and express my appreciation to the organizers of this conference for bringing you here to discuss our shared Bering Sea resources. I would like especially to echo Professor Kolbosov's introduction to you in which he stressed that the Bering Sea is an element that unites -- not divides -- us.

Probably there is no one here who has not been affected by the events which have taken place in the Soviet Union over the past two years, but I think I can say with some confidence, that in our two nations no one has been so deeply and personally touched by those changes as the people of Alaska and the people of the Soviet Far East.

Thousands of years ago, the first Alaskans came into our country from the steppes of Siberia and from places further to the west, places that are now lost in the mists of time. Not only were those intrepid hunters the first Alaskans, they were also the first Americans.

From that day until 1948, the aboriginal people of the Arctic maintained family ties, friendships, and trading relations across the Bering Strait. They used, and in fact relied upon, the fish, birds, and the marine mammals that also range freely between the continents. But in 1948, for reasons that were incomprehensible to the Yupik, the Inupiat, and the Chukchi, all of that ended. Families were suddenly

cut off from each other by what became known in the North as the Ice Curtain erected by central governments thousands of miles away.

Probably a person would have to have been there, as I was, to fully appreciate the historic flight on June 13, 1988, from Nome to the city of Provideniya on the Soviet far eastern shore. The government officials like me, to the numerous representatives of the press, and to the private citizens of Nome who initiated this trip, the landing of the Alaska Airlines 737 in Provideniya was an important symbolic event.

But to the Eskimo people who went with us, the "Friendship Flight" had a meaning far beyond symbolism. The reuniting of an 80-year-old Yupik Eskimo woman, born in Chukhotka on the Soviet side, with her family for the first time in almost fifty years, gave a powerful human dimension to the geopolitical decisions made in the highest councils of our two nations. Jane Alghtutak had come home.

So, perhaps it's understandable why most Alaskans see the melting of the ice curtain in terms that transcend politics and trade. We in Alaska are pursuing a variety of activities with our neighbors to the West, with a growing sense that we have a special mission for which we are uniquely qualified, both geographically and historically.

First off, and most importantly, Alaska is in this relationship for the long term. We believe that geopolitical stability helps all people and all nations. And, we understand that political freedom must be accompanied by meat on the table. For perestroika to work, the Soviet economic system has to work. We have initiated many trade ventures, educational exchanges, and technical visits in addition to our growing personal friendship with our friends across the Bering Sea.

We also believe that economic development and the management of natural resources must be planned for the long term. To ensure that we will have the bounty of the Bering Sea to share with our children and with each other, we have to protect the environment that nurtures it.

The Bering Sea is rich and, for now, it is also relatively free of pollution. However, we are beginning to learn that what we do in one part of the world can have an effect elsewhere. The capacity of our oceans to absorb waste products, garbage and accidental discharges of noxious substances is limited; very limited. What we do in Kotzebue, in Anadyr, in the Pribilofs even in Prince William Sound can ultimately affect the Bering Sea environment.

Dr. Alexander pointed out earlier today that there are gaps in our knowledge of the Bering Sea ecosystem and its resources. There also are big gaps in our knowledge of how human actions can change the environment, as well as gaps in our ability to respond to pollution events when they occur. We learned painfully of that fact last year when the *Exxon Valdez* went on the rocks. Our friends in the Soviet Union helped us respond to the Prince William Sound spill by sending their oil skimmer, the *Vaydaghubskiy*. We have since continued exchanges of technical personnel and information on pollution response and prevention.

By virtue of the hard work of people on both sides of the Bering Strait, and as recently agreed to by President Bush and President Gorbachev, we also have the opportunity to establish a truly international and intercontinental reserve, and that's of course the Bering Land Bridge Heritage Park. I hope that, by the end of 1991, we will have developed the necessary legal and administrative framework for a park to serve many uses: environmental protection, judicious use of natural resources, scientific study, and the enhancement of indigenous cultures.

I also see an energy industry near Yakutsk and on Sakhalin Island which can be improved through technology developed for the North Slope of Alaska and the Beaufort Sea, including information that we have learned about avoiding impacts on migrating bowhead whales. We also have seen in Alaska the development of one of the most sophisticated oil spill response barges to date for use this summer in oil exploration in the Chukchi Sea.

In another area, Alaskans and Soviets are exploring the possibility of joint mining ventures. The mining industry on each side can profit from techniques that have been developed by the other. We have sent technical staff from our Department of Environmental Conservation to share what we've learned about

maintaining water quality during mining operations I hope that you can further those discussions among colleagues during this conference.

On yet another concern, I understand that elders among our Inupiat Eskimos have noticed a change in the color of the sun. A recent air sample taken near Juneau, for purposes of monitoring the pollution associated with Arctic haze, revealed that some of the material originated in Eastern Europe. In Alaska we were fortunate enough this year to be the recipient of a federal grant for the development of clean coal technology for electrical power generation. If it works, that improved technology could go a long way towards alleviating many of the air pollution problems that our Soviet friends are beginning to address.

Joint ventures between Alaskan and Soviet fishermen are also fast becoming a reality. The shared sovereignty of the Bering Sea and the North Pacific has led to Alaskan-Soviet negotiations over the past two years for conservation of our great productive northern fisheries. We have reason to believe those negotiations will result in the first real high-seas fisheries management treaty in history. While such an agreement will have to be signed by our respective national governments, the momentum clearly came as a direct result of talks between Alaskans and people associated with the Soviet Ministry of Fisheries. We both have common goals, and we are acting in concert to achieve those goals.

I might add, that if those negotiations are successful, the natural result would be an expansion of an international fisheries management regime to all the high-seas. It could be the start of a very dramatic improvement in the way that we manage resources world-wide. Alaska has had a lot to do with this, and of course the Soviets have had a great deal to do with it as well. It would be nice if the two of us could go into this and initiate these very important talks as partners. I believe that we will do so.

Everybody here knows that the resources of the Bering Sea are more than a source of economic opportunity. They also provide sustenance and a way of life in coastal communities on both sides of the water. Subsistence use of salmon, herring, shellfish, birds and marine mammals was not only the foundation of the cultures that linked the two sides of the Bering Sea in the past, it continues today.

We need to take great care to provide and to learn our lessons from this great cultural heritage.

In conclusion, I am encouraged and proud to witness this gathering of scientists, lawyers, and administrators focusing on joint solutions to common problems. Natural resources do not acknowledge political boundaries. The fish as they swim from the 200-mile limit on the Soviet side or the U.S. side do not notice the dotted line as they swim into the high-seas where there is basically no law to protect them. It is our responsibility to understand how the Earth works and to make the best use of our resources, while conserving them and protecting them wherever they lie.

I wish this conference well. I think it is an historic gathering, and I think that we're going to see some great positive results because of the deliberations that you're having today.

Thank you, very much for inviting me to address you.

COMMENT BY DINAH BEAR

Governor Cowper, thank you very much for that dynamic address, and thank you also very much for your personal support over the past two years as we have been planning this conference. Your staff has also been extremely significant in assisting those of us who have been organizing the conference, and we thank you and your staff very, very much.



Red-legged kittiwakes at the Pribilof Islands, Alaska. Photo by John Domont, Center for Marine Conservation.

ALEXANDER GOLOVKIN

*Priroda Scientific Research Institute
Goskompriroda*

First of all, I'd like to say a few words about what marine ornithology is about. Usually businessmen and administrators think of marine ornithologists as people carrying binoculars and wearing funny long pants who walk around in circles, and instead of doing business, count birds. And why do we need to count birds if they don't represent any commercial value. They're not seals, they're not fish, they're not walruses, we can't get fat from them or meat. So, let's take a look at what pelagic sea birds are and what they mean for the world as a whole.

The latest data show that there are about 275 million nesting pairs of sea birds in the world's oceans. They are distributed by no means in an equal way. In the region we're talking about, the Bering Sea Region, there are about 20 million pairs. If we look at the major demographic parameters, and in addition to nesting birds if we include immature and non-nesting birds as well, we see that the overall population of birds in the world's oceans are 1,420,000,000 birds (one billion, four-hundred and twenty million birds). Is this a lot or is this not very much for the world's oceans?

Businessmen who are involved in fishing have finally become interested in sea birds. They have finally suspected that they are competing with the sea birds, because the sea birds for the most part eat fish. When this question arose for the first time in the 1960's, many marine ornithologists, including myself in the Soviet Union, answered "no" to this question. "No, there is no competition between the fishing industry and marine birds," because sea birds feed on small fish, for the most part, fish that do not present any particular commercial interests. And commercial fishing interests are looking out for larger fish and more valuable fish. But time has passed and we now see that competition between fishing interests and sea birds does take place in many regions of the world's oceans.

We know of the terrible ecological disaster in the area around Peru where fishing was very intensive, plus other phenomenon. We know the ecological disaster that took place near the shores of South Africa in which many, many sea birds

perished as well. We know of ecological disasters in the North Sea, and more recently in the Barents Sea. In all these instances, the challenge to compete did not come from the birds, but from humans. The humans have won the challenge, the competition. The birds have greatly decreased in number, but the amount of fish available to the fishing industry has not increased. We have counted and calculated that every year the sea birds of the entire world eat 95 million tons of biological productivity. Of this, 52 million tons are zooplankton and 43 million tons are nekton, that is, fish and squid. This consumption of plankton is only two times less than used by whales at the peak of their population, the consumption of nekton equals nearly 50 percent of world commercial fishing.

If we compare the fish that is consumed by birds, with the fish caught by the fishing industry, we can see that these are pretty much equal. What does this mean? It means it's possible that the fishing industry is thinking of increasing the volume of its catch at the expense of the fish that the sea birds eat.

Birds in the world ocean are distributed unevenly as you know. The largest concentrations are around those areas where the currents produces anomalies where there is an upwelling and where there are anomalies within the sea caused by the currents. This uneven distribution can not only be seen in the distribution of birds on the sea, but also in their nesting colonies.

More often than not we find small colonies most frequently; up to 1,000 birds. However, the other birds nest in large colonies of hundreds of thousands up to a million. Looking at the Bering Sea, we can see that the smaller colonies are distributed fairly evenly over all habitats, including small islands, large islands, and the mainland. But the larger colonies, beginning from the size of tens of thousands and going up to a million, are for the most part distributed on small islands that are 10 kilometers square or less.

At the same time, we know that near the smaller islands the current does strange things there -- it turns, it swirls, and there is a laminar flow that plays a role. Also, in upwelling areas, all this promotes particularly favorable productivity of food for sea birds, both for the adult birds as well as for gathering of food for the fledgling birds.

At the same time, we know that sea birds spend about one-third of their life near their colony. This means that, if on the whole, the sea bird consumption of fish and other marine organisms is about three percent of the fish in the sea, then close to the colonies, the consumption of the fish accounts for up to 10 percent to 20 percent of the entire fish production. This shows us that, if there is competition between industrial/commercial fishing and the birds occur around the continental shelf, then the competition is particularly serious, because the birds are not able to find themselves enough food if commercial fishing is taking place nearby.

However, the birds do not only eat fish. They also fertilize the waters near their colonies with a large amount of excrement, which contains both nitrogen and phosphorous in various organic and non-organic forms. This stimulates the development of phytoplankton. There are several examples of enriched zones which are located near the sea bird colonies. This is a biochemical anomaly in a way that arises when the bird excrement is washed into the water. We have confirmed in field studies as well as statistically that these enriched zones are a consequence of the action of the excrement. In the sea bird colonies, this action has been found in 60 percent of the world's seas: in the North Atlantic; in the North Pacific; as well as in the South Atlantic.

There is a precise correlation between the number of nesting birds and the scale of enriched land around there. Different concentrations of sea bird excrement impact differently on the development of phytoplankton. They stimulate its development, particularly with regard to the organic part of the excrement.

Around the nesting colonies, simultaneously we see a rise in the amount of phosphorous in the water and the amount of phytoplankton in that water. And what is more, the increase of phosphorous in the water is related to the time in the bird's life when they become more active. When they are increasing the amount of biogenic material, they add to the environment.

I'm coming to a close now. The amount of biogenic substances is not anywhere near to what is carried by the river's flow. It's about four percent of

nitrogen and 19 percent phosphorous. What this means is that these unique feeding habitats that are formed near the nesting bird's colonies work as a trigger factor for preserving areas of high plankton productivity. And we see that, in these areas, the amount of plankton is especially high when the birds begin to actively feed on this vital plankton.

The bird is a remarkable creation. Should we preserve them only as a monument of nature? I hope that using the example of birds, I've been able to show you that they are an important part of the ecosystem, and that to preserve the ecosystem so we will always be able to catch enough fish, we need to remember that the ecosystem has taken millions of years to evolve. We can destroy it in a mere 10 years. And for the sake of future generations as part of our natural heritage, we need to preserve the ecosystem as a whole and, above all, we need to remind those people who are working out plans for the biological resources of the sea, they should remember this.



Discarded net fragments recovered from a Bering Sea beach. National Marine Fisheries Service photo.

PANEL THREE

MARINE POLLUTION IN THE BERING SEA

INTRODUCTORY REMARKS BY DINAH BEAR

This is the panel on marine pollution in the Bering Sea. It's being chaired by Suzanne Iudicello. Suzanne has been helping us organize this conference since the very beginning, both in her former role as legal assistant to the Center for Marine Conservation and in her current role as Assistant Director for Fisheries and the Environment for Governor Cowper's office in Washington D.C. You'll note that both of those entities are co-sponsors of this conference and Suzanne is obviously the common link there.

In her earlier days, she was a writer in the Fairbanks area and other places in Alaska. And immediately after that, she was the Special Assistant to the Commissioner of the Alaska Fish & Game Department and also the editor of the Alaska Fish & Game Magazine.

OPENING REMARKS

SUZANNE IUDICELLO

*Assistant Director for Fisheries and the Environment
Office of the Governor, State of Alaska*

I'm hoping that our topic is the shortest topic about which you'll hear, because we've got the bad news to talk about, which is the topic of marine pollution in the Bering Sea. Thus far, you've heard about the riches of the Bering Sea and all that it has to offer us. The panelists that we have with us today are going to talk about the potential threats to those resources.

We have here today Margo Jackson, who's with the Office of General Counsel of the National Oceanic and Atmospheric Administration; Dennis Kelso, who is the Commissioner of the Alaska Department of Environmental Conservation; Gary Dailey, who is the Harbormaster of Port of St. Paul; Eric Smith, who is an attorney representing environmental and Alaska Native interests in Alaska; Captain Ted Thompson with the U.S. Coast Guard, who is in charge of port safety; Pamela Bergman, who is with the Environmental Affairs Office of the Department of the Interior.

INTRODUCTION OF THE SOVIET PANELISTS BY ALEXANDER TIMOSHENKO

Today two people from the Soviet side are going to participate, two people who are not listed on the list. Most of you already know them since they have participated in previous discussions, but I wanted to introduce them for those who perhaps arrived only today.

These are Viktor Naumov, the responsible officer from Magadan Oblast and the Chairman of the Environmental Protection Commission of the Magadan Oblast Council. So, he is what you might call a legislator. The second participant is Grigoriy Kovalyev, the head of a department at *Goskompriroda*. Viktor Naumov is a man who is quite well informed about local problems. He represents Magadan Oblast here. And Grigoriy Kovalyev is well acquainted with the latest organizational innovations on an administrative level in his region as far as both fishing and marine pollution are concerned.

REMARKS BY SUZANNE IUDICELLO

I'd like to give you a brief overview of what we know today about marine pollution in the Bering Sea; what potential sources of pollution lurk out there; and then I would like to turn it over to the panelists to describe the U.S. Federal and State regimes for addressing marine pollution. And I hope that we'll have time at the end, after we've heard from the Soviet and the U.S. speakers about our laws and administrative approaches, to talk about where the gaps might lie and what new

mechanisms we might need to address pollution prevention to keep the Bering Sea the rich area that it is.

The pollution that is documented today in the Bering Sea area takes three forms. First, we know that plastic in the form of marine debris, particularly that cast off from fishing operations, occurs along all of the beaches. In some of the most remote areas of Alaska, beach surveys collect literally tons of plastic debris.

Pollution by oil from the groundings of vessels has occurred more times than we would like to note in the past several years. And both Dennis Kelso and Gary Dailey will be talking specifically about how that has occurred and what has been done to respond to it.

Land-based sources of pollution in the Bering Sea are few and far between, but they do exist. Coastal communities that have port and harbor developments do contribute some pollutants to the ocean, and then economic development activities such as on- and off-shore mining also contribute to the waters of the Bering Sea, pollutants that we are now finding in trace elements, as you heard in walrus, and also there was a concern about levels of mercury in the area around Nome.

The potential lies out there for many new sources of pollution. The hopes of economic development in remote coastal areas that exist in Alaska is coupled with the fear that economic development, if it is not compatible with the kinds of subsistence and commercial fishing activities that already occur, could cause conflicts. For example, there are proposals for new mining development both on-shore and off-shore. There is occurring this summer in the Chukchi Sea off-shore oil and gas exploration. More sales are proposed in both the Chukchi and in other areas along the coast.

Additionally, coastal communities in Western Alaska would like to expand. They look to develop new harbor and port facilities so that they can accommodate growing fishing fleets and other activities such as the off-shore exploration for minerals.

Some other sources that are out there, that we have really no idea yet what they might be contributing to the marine environment, include derelict vessels and dumps of old munitions, and wrecked aircraft from World War II. These are very remote areas; very dangerous areas. No salvage operations have taken place to discover what might lie out there, or what it's doing on the bottom on the ocean.

There is evidence of Arctic haze, and so we need to ask ourselves what is happening with the Bering Sea ecosystem as a result of global climate change. Are there temperature changes that affect the Bering Sea? And is that kind of thermal pollution something we need to concern ourselves about in the future? What is the occurrence of acid rain depositions? I think we really don't have very much documentation yet about water quality changes as a result of that.

An effect of the potential that lies out there is that, although we focus a lot of attention on the discard of prohibited fish species as a by-catch in fishing operations -- more than 30 million tons a year of species that are not allowed to be marketed by certain vessels because of our allocation system in the United States and are tossed overboard -- we have yet to determine what that amount of decaying material is doing to the quality of the water, or what it's doing to affect the way species congregate on the bottom of the sea.

The effects of marine pollution are, in some instances immediate and very perceptible; in other cases, they take place over a long period of time and by small degree. It's very clear what happens when a fur seal is entangled in pieces of discarded fishing gear. The animals can be entangled and drown. Sometimes they ingest pieces of plastic that affects their growth and reproduction.

Fish and shellfish are ensnared in what are called "ghost nets", discarded pieces of netting that continue to fish, and the fish are caught, rot, fall out and then new fish again are caught.

Lastly, beach debris is clearly obvious to anyone that can walk these coastal areas. But perhaps most insidious and most important for us, is to figure out what the effects of marine pollution are on human health. We heard earlier today about concerns on the part of the Fish & Wildlife Service; about what concentrations of

heavy metal in walrus meat might mean to the coastal people who use that meat for subsistence purposes. Those materials also accumulate in fish and we're finding evidence of some of those materials in pollock and other bottom feeders.

Most of these, like most of the other questions about the Bering Sea ecosystem, remain unanswered, and for those issues about which we have the documentation, we have some regimes to address them. But perhaps the most important work that we have ahead of us is to figure out ways to document what is out there, the effects that it might have, and then find ways to prevent more pollution from entering this very important ecosystem.

MARGARET JACKSON

*Assistant General Counsel
NOAA (Ocean Services)*

I'm very pleased to be here to see two countries and cultures trying to work out solutions to these very complex problems. One of the acts which NOAA, the federal agency that I work for, administers is the Coastal Zone Management Act. This act contemplates a federal/state partnership in which the states, along with the federal government, seek to implement the primary purposes of that act, which are: protection of natural resources; the management of coastal development to avoid hazardous areas; priority consideration for coastal dependent uses and energy facility sitings; public shorefront access; assistance in development of waterfronts and ports; consultation and coordination with federal agencies; public participation in coastal decision-making, and overall comprehensive planning, conservation and management of living marine resources.

Under that program, 20 of the 35 eligible states have voluntarily joined the program. At least one of the non-participating states, Ohio, is developing a program currently and hopes to be a part of Coastal Zone Management Program (CZMP) by the end of this year or early next year. Several other of the non-participating states have also indicated an interest in joining the CZMP.

The primary state benefits from the program are two-fold; 1) the receipt of federal monies to assist the states in developing programs for their coastal zone; and 2) (and probably as important) is the use of what we know as consistency; that is the ability to influence private and federal projects occurring in the state's coastal zone who are having an effect on a state's coastal zone. If the state does not find that the proposed project is consistent with its laws, then it can have an effect, in the case of private projects, actually stop those projects from occurring in its coastal zone unless the Secretary of Commerce overrides the state's objection, or in the case of Federal projects, can force the federal agency at least to re-look at the situation and perhaps take its concerns into account.

The Coastal Zone Management Act expires in September of this year, therefore it's up for reauthorization in our Congress. It's noteworthy that the administration

submitted a bill. In the last 8 to 9 years, the administration has not submitted a Coastal Zone Management Act. In fact, it's zero funded, a coastal zone management function. This year, we not only asked for funds, we submitted an administration bill.

Part of that bill, Section 306B of the administration bill encourages states to implement certain National priorities within their CZMP.

One of those priorities is the significant reduction in beach and marine debris. States are encouraged to, along with NOAA's input, to develop programs that would have an effect on what is turning up on their shores. The proposed Senate draft of the CZMA, and again I emphasize draft (it has not been introduced as a bill), but it would require the Secretaries of Commerce and State to develop programs of technical assistance in coastal zone management to basically export to other nations; to assist other countries, hopefully the USSR if they're in need, as well as other countries, to set up programs which would assist them in developing coastal zone management programs similar to what we have or even different, but join on our experience.

Turning to Alaska, the Alaska CZMP administratively is located within the Division of Governmental Coordination (DGC). This division has worked with private groups, industry groups and others on a state-wide task force, Marine Debris Action Group, addressing marine debris and effects of federal marine debris legislation on coastal communities.

Some of the things that they have been responsible for is producing brochures and other material regarding beach cleanup. They've sponsored the regional and statewide coastal district conferences on marine debris.

In their next fiscal year's coastal management plan, Alaska has proposed to continue the education function of their citizens regarding marine debris and how to prevent it, as well as to coordinate the development of beach clean-up kits for both the general public and educators.

A part of the CZMP, as well as some other initiatives within the Agency, is one initiative called the NOAA Coastal Ocean Program. They are looking towards, in FY92, developing a program for reducing beach and marine debris. Primarily, they are proposing solicitation of research demonstration projects; the documentation and dissemination of the results of those efforts, and providing NOAA technical assistance and monitoring to aid the establishment of local and state marine beach debris reduction and eradication programs.

Another area in which NOAA has been very involved, again still with debris, but a slightly different focus, is the drift net problem. Under the Driftnet Impact Monitoring Assessment and Control Act of 1987, NOAA has been tasked with giving a report to Congress with certain evaluations and recommendations. Specifically, NOAA was to evaluate the feasibility of marking, registry, and identification systems for drift net. The alternative drift net materials would presumably be biodegradable. They're also supposed to evaluate a drift net bounty system and drift net fishery vessel tracking system.

In the North Pacific Ocean large scale high seas gillnet or driftnet fisheries concentrate on salmon, squid and tuna. These fisheries are run primarily by the Japanese, Koreans, and Taiwanese. The U.S. has small-scale drift gillnet fisheries that catch many species, such as sharks, halibut, swordfish, and rockfish. The U.S. fisheries operate mostly with the U.S. EEZ and are managed under the Magnusson Fisheries Conservation and Management Act.

Some of the characteristics of driftnets lead to the problems that we have in terms of lost or discarded nets. The nets are primarily plastic, which means they're durable, inexpensive, and strong. They're made of monofilament nylon webbing, usually 35 to 50 meters sections laced together to make nets of 5 km or longer. Over 1,200 non-U.S. driftnet vessels fish in the North Pacific Ocean yearly.

Loss of many of these driftnets is a problem although little is actually known about the frequency of net loss. It is estimated, however, that about 12 miles of whole or partial driftnets are lost per day; that translates into about 4100 miles of driftnet per year. Most of these losses occur at night or may be lost in bad

weather. The driftnets may be damaged by other vessels, snagged on the bottom or floating objects.

Lost discarded nets lead to the phenomenon known as "Ghostfishing". The nets continue to fish, although they're not manned for the normal purposes. They have trapped fish, turtles, seals, sea lions, dolphins, whales and other living marine resources including endangered species such as the Hawaiian monk seal and various sea turtles.

Lost nets also entangle propellers, disable steering systems, and damage drive shafts. Human entanglement has also been documented. There is a lack of understanding about how the nets eventually collapse and sink. Some nets have been found with contents that indicate they have been fishing for years. These nets are nearly invisible in the water, and entangled organisms often attract other marine life to them to feed on. And they also get entangled, so the problem simply worsens.

Since the Driftnet Impact Act was passed, there have been three conferences that have looked at some of these issues. One conference was held by the National Marine Fisheries Service and was titled "Fisheries-Generated Marine Debris and Derelict Fishing Gear" and was in Portland, Oregon, in 1988. There was also the North Pacific Rim Fisheries Conference on Marine Debris in October of the same year. This was held by Canada, Republic of China, Japan, and the Republic of Korea and the United States. Then last year, the Second International Conference on Marine Debris working group was held in Honolulu, Hawaii.

Regarding what we've found to date on marking, registry, and identification systems, we looked at the feasibility of net identification systems to deter international abandonment or discarding. Currently some commercial traps and pots are tagged with identifying information, such as: names, license number, et cetera to facilitate the return of lost items. To enforce the Driftnet Act, we would probably need third party marking of these nets since identification of an owner could perhaps lead to legal action for damage caused by the loss of discarded nets.

An additional complication in this would be the practice of trading and selling of equipment. We don't know with what frequency with which this is done, but it's clearly a common practice.

Under a NOAA Fisheries Grant, Northwest Marine Technology, Inc., did a study of "Marking of Fishing Gear" in 1989. It analyzed and compared various types of gear markers, and rated them using various criteria: external tags, implants, chemical codes, and bonded sheaths. The internal implants ranked best for floats and ropes; either implants or the bounded sheath systems ranked best for netting.

It is technically feasible to mark gear for reliable owner identification. However, further research and development would be necessary along with field testing. The substantial constraints, however on the use of such a system would be more from the socioeconomic side. We'd need to evaluate the social and economic impacts of using in such a system as well as the establishment of an effective international administrative system, including regulations, and negotiated international cooperative agreements.

Right now little is known regarding the control of the degradation process. Concerns regarding premature failure have been expressed. Some degradable plastic processes are available, but are not considered reasonable alternatives for driftnets.

In 1987, Dr. Anthony Andrade did research on the use of degradable fishing gear and packaging materials. He identified water, microbes, and light as natural factors which may contribute significantly to netting decomposition. He reviewed four potential techniques to increase the rate of plastic degradation: 1) the modification of polymer chains; 2) the use of photo-sensitive additions in the plastic composition; 3) the use of starch in plastic to promote biodegradability in the absence of light; and 4) the use of various biodegradable plastics as blends with either nylon or polyolefin to obtain biodegradable gear.

NOAA also looked at a possible driftnet bounty system. Lost nets are usually not recovered; there's no existing system to encourage successful retrieval of lost nets. There are the usual apparent constraints such as funding, the need for

international agreements and treaties, and regulations and development of an administrative system if a bounty system were to be undertaken.

There is much need for further research on various aspects of the driftnet pollution problem such as the economic aspects and impacts, a continuing survey of the entangling of debris on Alaska beaches, continuing research into the impact of lost and discarded gear on endangered species, and further models for public education.

NOAA will be continuing in this effort, and I'm sure Alaska and other groups that are interested in this around the country will be watching what we do and assisting as well.

DENNIS KELSO

Commissioner, Alaska Department of Environmental Conservation

I was struck in the discussions this morning and this early afternoon about the variety of ways in which biological resources can be harmed. For Alaskans who depend directly on the use of those resources, whether for commercial fishing or for subsistence hunting and fishing, these are extremely serious issues. And finding a way for local people to participate directly in the decisions that affect their future, is part of what the Coastal Zone Management Program is about.

In the Bering Sea at this time there are several resource issues that are competing or that pose potential risks. For example, off-shore placer gold mining on state and federal submerged lands near the City of Nome, the Seward peninsula and the Yukon-Kuskokwim Delta; oil and gas leasing and exploration of off-shore submerged lands from Bristol Bay northward into the Chukchi Sea; commercial fishing in both near-shore and off-shore areas; protection of subsistence hunting and fishing that are essential to the economies and cultures of many Alaskan communities of the Bering Sea; and marine pollution from ships discharging waste materials.

The Alaska Coastal Management Program allows local people, the State of Alaska, and the U.S. Federal government to work together to address this type of issue. The program serves three main purposes: 1) it allows the State of Alaska to ensure that coastal development and other activities are conducted in a way that conserves and protects Alaska's marine and coastal resources; 2) it gives local coastal residents a voice in how the coast and oceans are used; and 3) it establishes communication links between local, state, and federal governments.

Let me show how the Alaska Coastal Management Program works. In the portion of the coastal zone that corresponds to the Bering and Chukchi Seas there are nine coastal districts, each of which is represented by an elected board of local residents. The people on these boards live on or near the Bering Sea coastline. Some are Inupiat and Yupik Eskimos who depend on fish and wildlife for their food; others are commercial fishermen who make a living on the rich salmon

and bottomfish. Still others are local residents interested in wisely developing the region's other marine resources.

The people who live in these areas have written plans that specify how their coastal areas and the resources upon which they depend should be used and protected. The local plans are approved by a state Coastal Policy Council made up of state government representatives and local residents. The plans are also approved by the U.S. government. Once approved, the plans become state and federal law. They must be followed by people proposing development projects in Alaska's coastal zone, as well as by all levels of government, including local, state and federal.

I'd like to mention a few examples of how this process has worked in the lives of real communities. Let's take Bering Sea off-shore gold mining as an example. The U.S. Department of Interior plans to lease 150,000 acres of seafloor west of the Seward Peninsula for gold mining. Through the coastal management program, a coordination team was established with representatives from the federal and state governments, local residents, industry, and scientists. The team met through 1989 to review offshore mining issues. While the final environmental documents for the project have not been released, the sorts of agreements we expect to be included are: 1) stipulations to mitigate possible impacts of mining on fish and wildlife, water quality, and historical and cultural resources; and 2) in response to the concerns of local residents about the possible accumulation of mercury in the food chain, a study of existing mercury levels in Norton Sound residents was conducted, and future monitoring will be required. In addition, the use of mercury or other toxic substances in the gold processing will be prohibited. Additional reviews by local coastal residents and the State of Alaska will be done later on when additional information is known about the activities that will take place as part of the mining operation.

Another example is oil spill prevention in Norton Sound. In 1984, two companies were exploring for oil and gas in Norton Sound using drilling rigs that could operate only in open water, not in broken ice or pack ice conditions. The State of Alaska wanted to ensure that, in the event of an oil spill from a drilling rig blow-out, the companies would be able to drill an effective relief well to

control the blow-out before ice formed over the spill. Through the Coastal Management Program, the state was successful in getting the federal government to require that the companies stop drilling 30 days prior to the formation of ice in Norton Sound, allowing them sufficient time to drill a relief well in case of a spill.

A third example would be protection of opportunities for subsistence hunting for marine mammals by coastal residents. Coastal residents along both the Bering and Chukchi Seas have used coastal management plans to insure that their traditional hunting of marine mammals is not interrupted by other resource development activities. The North Slope Borough Plan requires that off-shore drilling and other development within the bowhead whale migration corridor not interfere with subsistence activities nor jeopardize the whale population. The people of Kotzebue and nearby villages conduct an annual beluga whale hunt in Eschscholtz Bay, south of Kotzebue. The plan for this area insures that the development activities, including potential oil and gas development, will not displace belugas from the bay nor interfere with the annual hunt.

These are a few examples of cases where the communication between local people, the State of Alaska, and the United States government successfully resolves possible conflicts over the different uses of coastal resources. But that communication alone may not solve all the problems. In fact, the state and local people believe that it did not solve the problem at all in Bristol Bay. Bristol Bay in the southern Bering Sea is an extremely important salmon fishery. The state and local people believe that this area is too valuable as a biological resource to expose to potential dangers from oil and gas development. Nevertheless, the federal government has continued with development plans for the Bay. Unable to have our concerns addressed by the federal government through the coastal management process, the state was forced to take the issue to court, challenging the lease sale unsuccessfully all the way to the US Supreme Court. This dispute has required that the US Congress become involved to establish a legislative moratorium on exploration in Bristol Bay.

I would like briefly to talk about how the *Exxon Valdez* oil spill experience fits with this local and state involvement in coastal resource protection. The lessons of the *Exxon Valdez* spill are varied, and I will just summarize them here.

It is extremely important to prevent spills because the responses to spills are difficult, expensive, and only partly effective. We estimate that between six and seven million gallons of crude oil remains in the environment following the *Exxon Valdez* spill, if you exclude all of the oil that evaporated and has been recovered.

The acute damage was severe. More wildlife died in this spill than any other in history. Seabirds alone suffered perhaps two hundred to three hundred thousand mortality in the populations of this area. And the chronic effects are not yet known. Prevention measures are essential. Those include tanker design and construction -- for example, double hulls and double bottoms -- and improvements in tanker operations -- for example, restricting operations when weather, ice, or other conditions make vessel movement or spill response more hazardous.

Traffic management and monitoring is also critical as well as crew size, training, condition of crew members, certification, and pilotage requirements. With respect to the other side of the protection equation response, there are also some key concepts that lie at the heart of adequate preparation. One is site-specific condition-specific oil spill response plans. Second is planning for, and equipping for, the most serious spills. It's important to have equipment available in the region of operation that can be brought in immediately, and other equipment outside the region of operation that can be operated as soon as possible to recover the spill. It's also essential that the most sensitive environments be identified ahead of time so that protective measures can be implemented immediately.

Of course, the plans are only as effective as their implementation is effective. So, drills and involvement of local people are both crucial. There are numerous opportunities, not only for local involvement, but also for international cooperation. Governor Cowper mentioned the Soviet vessel, the skimmer *Vaydaghubsky*, which was helpful in the *Exxon Valdez* spill, but which was brought in too late to be as effective as it might have been.

We also received direct assistance from the Norwegians who came to Prince William Sound and worked with us, with whom we hope to maintain a continuing relationship in response preparation planning. Internationally, it is an opportune time for direct cooperation in research and development as well.

I will not take time now to detail the specific steps taken by the State of Alaska, but if people would like to talk about those, I would be happy to outline what we have done. I would say though that it is extremely important now that the United States Congress do its part since the state is doing our part to make sure there are adequate safeguards. Congress has within its authority to establish tanker design standards and other safeguards that apply not only in Alaska, but in other areas of the United States as well.

And very importantly, and this is the point on which I would like to end, it is essential that Congress not preempt state and local authorities. We learned in this spill that the local knowledge, the determination of local people, the familiarity of State of Alaska officials with the conditions where the spill happened, were absolutely essential. And yet, Congress has come perilously close to passing laws that would prevent the local authorities from being able to do their work.

In both the coastal management program and in oil spill response, those key themes are: 1) the involvement of local people; 2) reliance on their special knowledge; and 3) the cooperation and communication between all levels of government, local, state and federal.

VICTOR NAUMOV

Magadan Oblast Committee on Nature Protection

I didn't realize that I would be speaking on this panel today, but I was asked to deliver a short report or make a few comments about questions of importance having to do with pollution of the Bering Sea. I would like to give you a little bit of information that could be interesting together with the views of the State Committee on Environmental Protection.

The issue of the pollution of the Bering Sea is of great importance for the areas in which subsistence living takes place. The well-being of many sources of food for the indigenous population is directly dependent on this. And not just the indigenous population: we're talking about fish resources and these also have great importance for the people of Magadan because fish is an important part of the diet of many people of the Magadan region.

It's very interesting, and yet alarming, to hear what the American side has said about traces of heavy metals found in the Bering Sea in the meat of marine mammals. We have not received such data yet, and we would be very interested in doing so.

What are the main sources and the most dangerous aspects of pollution of the Bering Sea environment? Of course, one of them -- maybe this is not the most important, but is still important -- is pollution that comes from population points, villages, along the coast, as well as farther inland along river banks. They have an impact directly on the animal resources of the coastal zone. We can say that this is very critical from the standpoint of the wastes that come from the villages.

Unfortunately, not enough attention has been paid to the clean-up of sewage water. The last meeting of the local council did a great deal of work on this subject, but their work is mostly relevant to the larger villages and towns. Right now we're building -- and we do plan to have it done within the next five years -- pollution control facilities for sewage water for the Anadyr region as well as in Provideniya, and also in several other large towns in the central portion of the Chukchi Peninsula. And we hope that the changing political situation will push the

government to give more financial subsidies to protection of the environment and sewage treatment in the Chukchi Peninsula because what has happened now is the the USSR has turned its face towards the US for help. This is a positive development in the relationship between our two countries, but I also see some negative aspects to the further development of industrial and commercial activity in this region.

Since as was mentioned at the last panel it is clear that the shipping industry will increase, the more shipping activity there is in the area, the greater is the chance of an oil spill. For instance, last year on the coast of the Magadan district a ship suffered a casualty during a big storm. This was a Canadian ship and the Canadian government did not inform us of the accident so we could not be on the site and we could do nothing to prevent the leakage of the oil into the Bering Sea. At the same time a group of inspectors that was sent to the boat found diesel fuel in the hold of the ship with other oil products. The ice was moving and in many places had damaged the sides of the ship. Fortunately it did not reach the unit that was carrying the oil so the tank that was carrying the oil was not damaged.

The other point that I wanted to bring up is that the villages and towns on the Bering Sea coast are not adequately equipped to contain spills if they happen. Only the ports of Anadyr and Provideniya are equipped to deal with any amount of oil that might be spilled. The northern communities of the Bering Sea are particularly vulnerable to oil spills and the spills of other oil-based products and so we need to take greater steps in order to ensure that we can contain spills should they happen. If we plan to create some sort of protected area in the Bering Sea area than I think it would be important to include in the structure a service that could take preventative measures and that could contain spills should they occur. This is particularly important in the context of the development of the oil industry in the Chukchi Peninsula.

It was very interesting for me to hear in Miss Jackson's speech what she said about cooperation in setting up a program for environmental protection. If this also means the Bering Strait, then I think this would be very positive.

PAMELA BERGMAN

*Pamela Bergman, Assistant Regional Director
Office of Environmental Affairs*

First of all, I'd like to thank you for the opportunity to participate in this conference. The Department of Interior certainly hopes that the conference generates some new ideas and cooperation that will help protect the Bering Sea resources.

The Department of Interior is an important federal agency in Alaska, since it manages large portions of the land in wildlife resources in the state. The department is a co-trustee for wildlife resources with the State of Alaska, I might also add. The department is concerned about all forms of marine pollution, really from two different perspectives; first of all, because of the potential impacts on Department of Interior resources, and secondly, to ensure that Interior activities themselves are not a source of marine pollution.

There are ten Interior Department bureaus and offices located in the state. My talk today will focus on bureaus and offices who have interests in the Bering Sea as well as those who have cooperative work ongoing with the USSR, which I will describe only briefly because of the time constraints. Our first bureau, the Bureau of Indian Affairs, has an interest in their many, many Native allotments that are along the Bering Sea coast. The principal area of cooperation with the USSR for the Bureau of Indian Affairs is funding that they have provided to establish and maintain the Eskimo Walrus Commission.

The Bureau of Mines has been involved in sea floor drilling projects near the Cape of Prince of Wales, looking at placer minerals and sand deposits. This has led to several cooperative placer mining efforts between the Bureau of Mines and the USSR. The US Geological Survey, a third division within the Department of Interior, currently has no specific projects in the Bering Sea, but they are working

on two joint projects with the USSR doing comparative studies of mineral resources in the Soviet Far East and Alaska.

The National Park Service does not have any parks in the Bering Sea area, but there are two national parks adjacent to the Chukchi Sea: Bering Land Bridge National Preserve and Cape Krusenstern National Monument. The Park Service is also very actively involved in cooperative ventures with the USSR. The Beringian International Park, of course, is an important project that you've heard about several times today. Paired Biosphere Reserve status is also being sought with the Noatak National Preserve and Biosphere Reserve and a comparable unit within the USSR. In addition, the Park Service is working with USSR biologists on a number of biological research studies.

The Fish and Wildlife Service within the Department of Interior plays an important role in the Bering Sea area. First, they are the trustee for migratory birds, sea otters, walrus, and polar bear, all of which are found in the Bering and Chukchi areas, and portions of five national wildlife refuges are in or adjacent to the Bering Sea, which represents significant portions of the coast line. The Fish and Wildlife Service is also very active in cooperative research with the USSR. They're conducting a variety of biological studies.

The Minerals Management Service within the Department of Interior also plays an important role in the Bering Sea, as has been mentioned by several people so far. The Minerals Management Service oversees the development of offshore energy and has divided the Bering Sea into 8 planning areas. There have been sales in several lease areas in 1983 and 1984 which resulted in exploratory drilling for oil in the mid-1980's. To date, no oil has been found as a result of that exploratory drilling. As has also been mentioned, two of the lease sales have been tied up in litigation for quite some time. The next sale in the Bering Sea will be for the Navarin Basin, and that sale is scheduled for 1991.

The Chukchi Sea is divided into two planning areas. The first Chukchi Sea sale in 1988 generated 350 leases and has resulted in exploratory drilling in 1989 and 1990 during the open water seasons, with expectations that additional exploratory drilling will continue in the years to come.

In July of 1991, there will be a second Chukchi Sea sale. The second planning area in the Chukchi Sea called the Hope Basin has a sale tentatively scheduled for 1993. In addition, there is a hard mineral sale scheduled for February 1991 off the Coast of Nome, part of the Norton Sound lease sale. In terms of areas of cooperation, the primary activities that MMS has been involved in include bowhead whale research and the exchange of an MMS social scientist, who will be going to the Soviet Union to work with a social scientist who will be conducting survey research in four communities, looking at social change due to economic development.

The last part of the Department of Interior I'd like to talk about today is the Office of Environmental Affairs. The Office of Environmental Affairs provides overall coordination and guidance for the Department of Interior in Alaska. It's comprised of three full-time staff, and it is the smallest Department of the Interior office in the state. The principal functions of this office that are relevant to this conference include the task of ensuring that the Department of Interior complies with the National Environmental Policy Act. This is accomplished through the review and approval of environmental documents, and by providing consultation to Interior bureaus.

Second, the office oversees and provides guidance on Department of Interior responsibility as a natural resource trustee under CERCLA, which is the Comprehensive Environmental Response, Compensation, and Liability Act, as well as under various oil spill liability statutes, including the Clean Water Act.

Third, the office oversees Department of Interior responses to incidents affecting Department of Interior natural resources, lands, and facilities, during and following oil spills, hazardous materials releases, and natural catastrophes such as earthquakes and tsunamis. This includes the removal and remedial actions at hazardous material sites, and representation of the Department of Interior on the Alaska Regional Response Team. The Regional Response Team is a group of federal and state representatives who provide advice to the federal on-scene coordinator during spill incidents.

Fourth, our office oversees Department of Interior compliance with all federal, state, and local environmental laws, directives, and requirements for

pollution control. Specifically of interest to this conference, as I mentioned before, our office's principal person, the regional and environmental officer, is the department's representative to the Alaska Regional Response Team.

Through that effort, we are involved in developing dispersant use guidelines for the Chukchi Sea for use in responding to offshore oil spills. We're involved in the approval for in situ burning requests, and for exploratory wells in the Outer Continental Shelf. We've led the development of a document called the "Wildlife Protection Guidelines for Alaska" for use during an oil spill. This document was developed cooperatively with state, federal, oil industry, Native community, and environmental interests. A copy was presented to a representative of the USSR National Marine Pollution Control Administration during a session that he chaired in the 1989 International Oil Spill Conference in San Antonio, where a paper was presented on the development of the guidelines.

Following pollution incidents, our office provides resource information to the Environmental Protection Agency or the US Coast Guard, the federal on-scene coordinator. This includes pollution incidents in the Bering Sea. There have been many in the last several years. These were Japanese, Greek, and Korean fishing vessels, or fishing-related vessels that went aground.

In March of 1989, we coordinated and implemented a bird rescue program in Unalaska, as a result of the grounding and diesel spill from the NB Swallow vessel. This program could not have been possible without a lot of cooperation from the local community. We also participated, both as a member of the US Coast Guard design team and a member of the control team, for the first Alaska Regional Response Team oil spill exercise with the USSR and with their representation which was held in Anchorage in 1988.

Our office is also involved in the review of oil and hazardous substances contingency plans for Outer Continental Shelf exploratory wells, as well as facilities such as the Red Dog Mine near Kotzebue. And lastly, our office has taken the lead in ensuring that cultural resources are taken into account during pollution response activities.

ERIC SMITH

*Representing Alaska Public Interest Organizations
Formerly, Director of Trustees for Alaska*

I appreciate the opportunity to speak. My perspective on this is primarily from working with and representing people who live along the Bering Sea coast as well as some of the environmental groups that have been involved in this issue. I asked to talk about challenges to pollution prevention. I'm going to break it into two parts, and I'll try to do them as quickly as I can in view of the limited time.

In the first part I want to highlight, from my perspective, some of the real challenges that are going to face the Bering Sea ecosystem from pollution in the future. You've heard a lot of discussion about oil spills. My perspective and that of many of the groups of people I've dealt with is that the government and the oil industry in the past were way overly sanguine about their ability to deal with the spills that might come up. I think there was a not-so-hidden assumption it would never happen. When the *Exxon Valdez* went aground, of course, that attitude changed, and I think in many way the agencies responded as responsibly as possible under the circumstances, although obviously there were criticisms.

However, I think that the overall policy that especially the federal government has been operating under is an assumption that the Bering Sea is appropriately open for as much oil and gas development as they think they can sponsor. That may or may not be a wise policy choice, but I think both the Americans and the Soviets have to analyze pretty carefully, and perhaps jointly, the magnitude of the exploration and development that's contemplated, and also some of the real challenges that are going to happen.

Just to pick a couple of examples: in Norton Sound, if they should go back, and if they should find oil, our understanding is that they will take the oil that they find there and they will pipe it either to a storage facility in Nome or to an offshore facility. They then plan to send the oil via icebreaker tankers through the pack ice, to the Alaska Peninsula. They'll pipe it across the peninsula and then they'll ship it by tanker south in a very heavily earthquake-prone area.

The capacity to clean up a spill from any of those, I would suggest, is not real good at this time. I have a very vivid memory of watching a burning test on the North Slope in a lagoon several years ago, where the boom melted and sank. I also watched them drop the little igniters into the oil and it wouldn't catch fire. They finally had to wade into the water and kind of set it on fire, and get out, and then the boom melted. Now, hopefully the technology has improved.

When you get into the Chukchi, the problems only get magnified, I suggest. Again, my point is not so much that it shouldn't be done -- although I think that can be argued in many cases -- my point is that there is a substantial and real threat from oil spills, and it's one that the technology cannot keep up with. And if the *Exxon Valdez* incident proved anything to the entire world, it proved that you can't assume it won't happen, no matter how careful your systems are for prevention. People make mistakes, captains get drunk. There was another ship where the steering system failed and they were able to bring it under control at the last minute. So, things happen no matter what you do.

The second important source of pollution is that from oil wells themselves. And this is something the panels haven't discussed as yet. I wanted to highlight a couple of possible sources. The first is drilling muds. For reasons that only the United States Environmental Protection Agency knows, drilling muds, although they have toxic materials in them, and hazardous waste in them, have not been classified as hazardous waste under American law. There was a strong effort to persuade the Environmental Protection Agency to do so and it refused.

The volume of the muds may not be great at any given time, but the accumulation of the muds is another matter. And with the discovery of trace elements I think in the marine mammals, it becomes important. Relatedly, there are produced waters, which is the water that comes up with the oil. Those waters are now discharged into the ocean. They too contain toxic materials like benzene, they contain heavy metals, and they contain a great deal of oil and grease.

One of the environmental groups I spoke with calculated that, under current federal limits in the Gulf of Mexico, 1.5 million barrels of produced waters are discharged into the water every day. That results in a yearly discharge of 25,000

barrels of oil and grease into the Gulf of Mexico. The daily amount may be small; the annual amount obviously becomes important. Those are estimates obviously, but I think that they're important. They give the sense of the magnitude if the Bering Sea should be developed in a manner like the Gulf of Mexico.

Finally, there's off-shore mining, which I think has been discussed a fair amount. And again, there are issues of concentration of heavy metals. There's also substantial turbidity issues from the plumes from the off-shore dredges.

The other area of challenge, and I think it's an area that can profitably be examined in this kind of conference, is how effectively to involve local people and citizens in decision-making. I think, in the case of the United State law, from my perspective, there is a serious divergence between theory and the reality of the way it works.

It is true that, in Alaska, there are Coastal Service Resource Area Boards which develop plans to allow the local people to be involved in what happens in their coastal areas. But the reality of those plans is something different. First of all, many of the plans, after they were finally approved by the state after a certain amount of negotiation, when they were sent for approval to the federal government, they ran into a buzz saw. They were held up; they were jerked around. In several cases, the federal government said they would not approve them unless criticisms from the oil industry and the Minerals Management Service first was addressed. That kind of substantial political pressure is far greater than any group of people who live along the Bering Sea can hope to match. And the result was that those plans were weakened, and the ability to substantively affect decisions was weakened too.

A second element involves the state's implementation of the program. Under the program, local plans must be complied with by development in those areas. But the local people, through their boards, are not the ones who make the decision whether the development complies with the plan. That decision is made by the state. Local people have something called "due deference" which in practical terms means that, if the state disagrees, they have to say why. In real terms, it means virtually nothing at all.

Commissioner Kelso pointed to a couple of what he called "real life examples", and being a good lawyer, I have my counter-examples, one which I think the Commissioner is almost tired of hearing about: the village of Tuluksak. It's a community on the Kuskokwim River that is considered to be within the coastal zone as defined near the Yukon-Kuskokwim Delta. There is a mining dredge that was operating up river of the location of that village. It's a Yupik Eskimo village that relies heavily on the river there for subsistence.

The coastal zone management process was not a process where the people in Tuliksak or the local Coastal Service Resource Area Board had a substantive input. They had a procedural input. Hearings were held; complaints were made; a lot of hearings were held. But when the final decision was made, the final decision was to go ahead and let the mining company mine over the vociferous opposition of the village. And perhaps more important from a process point of view, almost none of the stipulations that were suggested by the village were adopted.

The village argued that they knew that area pretty well, and that the miners' plans for mitigating impacts and reclamation would not work. The village even was able to find some experts who reviewed the data, which is pretty rare for a village. Usually those experts are either too expensive or are hired by the opposition. In this case, the village was lucky. Those experts found that there was no data to support the decision. They had no idea of the hydrology of that river. They had no idea of the number of fish in the river, or how to rebuild the river after it got torn up.

The coastal management process and the public process of the Bureau of Land Management paid no attention to those impacts and forced the village into court. Now, my point here is not so much to criticize what the government did, although I obviously just finished doing that -- it's more to highlight that there have to be mechanisms whereby local people not only have a right to say something, but they also have a right to have whatever they say mean something. I think all too often that government process is like a check list, and in the government under our system, people have managed to persuade the government to look at certain things, but we have almost no ability to affect how they look at them. And when you're

forced to go to the judiciary, you're asking judges to do things that they really aren't equipped to do.

So, I think in the context of the international use of the Bering Sea, it's important not only for the governments to talk about how they're going to deal with these important issues like marine pollution. It's important, for example, to have some kind of joint agreement on oil spill cleanup and containment. If nothing else, the oil's probably going to hit both sides one day. But I think it's also important to investigate mechanisms where people along the coasts of both countries have some way, if not to veto a government decision, at least to force the government to change what they do in some substantive way.

GRIGORIY KOVALYEV

Fisheries Section, Goskompriroda

In my brief remarks, I would like to address measures taken by the Soviet side to control the quality of the water in the Bering Sea. Because the waters of the Bering Sea contain a lot of important marine species, their exploitation must abide by biological principles of regulation. I think that to look at these things aside from their ecological impact would be incorrect.

What is it that is being done as far as *Goskompriroda's* work on maintaining environmental quality goes? The committee includes a sector that regulates the condition of the marine environment. This exists at the local level in places where there are large port facilities. There are marine inspections that do quality control on the condition of the marine environment. It includes the monitoring of water quality around ports as well as along sea lanes. In the USSR Economic Zone the Border Guard Service also gets involved in this monitoring work. Monitoring of the quality of the northern sea lane is done by the Ministry of the Commercial Marine Fleet. The work of all three bodies -- here we're talking about *Goskompriroda*, the Ministry of the Commercial Marine Fleet, and the Border Guard Service -- is coordinated by a united council which looks into the need for making regulations more strict, and which tries to determine the appropriate forces and investments in resources required for the three agencies to do their work correctly.

In this manner the Soviet side is able to take certain measures necessary to monitor the quality of the sea environment. As far as oil spills go, there is a special agency that has the appropriate equipment necessary for collecting spilled oil. At present these are the conditions for monitoring the sea environment. Here we're talking about the works in ports and harbors. Secondly air patrols by border guard forces and patrols carried out by Aeroflot, and finally what I just mentioned, that is, the special sea fleet used by Marflot.

Given the importance of the biological resources of the Bering Sea for both the Soviet and American sides, and keeping in mind the negative effects of pollution as well as the development of mining on the shelf, I think it would be quite useful at present to start conducting negotiations about joint studies of the effects of

pollution on the biological resources of this area. This will enable us to a large degree to side-step the negative effects which we know are already in existence in the Baltic Sea and in other areas of our country.

CAPTAIN TED THOMPSON

***Chief, Port Safety and Security
U.S. Coast Guard***

I would echo the sentiments of previous speakers and it is indeed a pleasure for me to be here to address you all. Mr. Daily and I will be addressing the marine pollution scheme. Actually, we got together before our talk here and developed a protocol for our discussion. I will discuss the MARPOL requirements, and then Mr. Daily, based on his broad experience, will tell you what I meant to say.

Actually, the issue of marine pollution did not begin with the environmental awareness of the 1970's. As early as 1921 and 1920, the United States, the United Kingdom, and other countries had in place some legislation regarding oil pollution from ships as a result of public outcry. In 1926, as a matter of fact, the United States sponsored, in Washington, D.C., a conference regarding oil pollution from ships.

The main points that were developed at this conference were as follows: the ships should retain waste on board; the vessels should be fitted with oil water separators to reduce overboard discharge; there should be oily waste reception facilities; there should be no-discharge zones; the flag states should exercise their authority over their vessels to insure that these points are met; and, as a philosophical note, flag states should undertake to eliminate impediments to retaining oily wastes aboard ship.

Now, if that sounds familiar, it's because it is. This conference was never signed; it was never ratified; it never went into effect. In 1948, the United Nations held a conference on reviewing pollution from ships. And the result was the establishment of the International Maritime Consultative Organization, which is now called the International Maritime Organization (IMO). As a result of the establishment of IMO in 1954, there was an oil pollution conference that resulted in some measures that were indeed ratified. Guess what those measures were? Oily waste retention aboard ships; oil/water separators; oily waste reception facilities;

no-discharge zones; and the flag states would exercise their authority over their vessels.

It also undertook to define what oil was (what they were talking about), what the applicability was (whether it applied to all ships or just some ships), and established a requirement for oil record books. Although it was ratified, it was never successful. The flag states failed in their responsibilities, proof of violations was difficult to obtain, and crews were hesitant to use the oil record books for fear that they could be used in criminal and civil cases against them. So, as a result, these same recommendations didn't go too far.

In 1964, the oil companies, bowing to public pressure, developed a system of load-on-top procedures to reduce the amount of discharge at sea during tank cleaning operations. This was adopted and had some marginal effect.

The international community recognized their failure in previous years and continued to try to develop international pollution prevention standards. In 1973, the International Convention for the Prevention of Pollution from Ships was drafted. Because it addressed maritime pollution, it was simply called MARPOL 73. It included the same measures that were included in 1926 and that were included again in the 1954 convention.

It also failed to be ratified because of some technical difficulties including noxious liquid substances. So, in 1978, the convention simply called the Tanker Pollution Conference was finally hammered out -- with essentially the same provisions that were presented in 1926. So, you might say that we went "back to the future".

MARPOL 73/78 came into force in 1983. It also included some vessel design criteria. In addition to some no-discharge zones, it included discharge limitations while encouraging the vessels to retain their oily slops on board. They required the oil and water separators, oil record books, and reception facilities. Annex 1 addressed oil, Annex 2 addressed noxious liquid substances, Annex 3 addresses packaged hazardous cargoes, Annex 4 addresses toilet facilities, Annex 5 addresses plastics and garbage.

Annex 5 was ratified in 1987. It essentially provides for no discharge of plastics at sea and limits the discharge of other materials depending on its size and the distance of the vessel from shore.

In 1987, the Marine Plastic Pollution Research Control Act was passed in the United States, which adopted MARPOL Annex 5 into United States law. In April of 1989, after lengthy administrative procedures, the Coast Guard published an interim rule for plastics, trash, and garbage discharge from ships.

An interesting point to bring out -- one I'm sure that has not escaped you -- is that each of the annexes -- although only Annexes 1, 2, and 5 are in force -- each of the annexes requires some sort of reception facility based on the size and number of vessels that call at various ports. So, I would like to address adequate reception facilities for a minute, if I can, and tell you that there are apparently some problems, which I am also sure you are aware of. We have received complaints internationally that the United States, in numerous ports, has not provided adequate reception facilities, and I emphasize the word 'adequate'. In a study in 1988 in New York City, it revealed that there were no requests -- none, zero -- no requests for oil discharge within that port, within all of the facilities located in the Port of New York and New Jersey, although there were 25,000 ship calls that year. That tells us something is wrong with MARPOL 73/78, and the way it's being handled, at least in this country and maybe internationally.

I'd like to look at why that provision is not being adequately followed, or is not adequate; why the adequate reception facilities indeed are not adequate. We have to look at the philosophical approach of a free market in a regulatory type of implementation. And that is that the regulations that we wrote as a response to the law adopting MARPOL required that the ports provide a reception facility for the noxious liquid substances, the oils, the plastics, and the garbage. However, a regulatory criteria to provide a reception facility does not translate into a profit-making enterprise, which is the normal driving force in a free market society, nor does the inability to make a profit equate to the ability for that reception facility to egress from the market. Therefore, it becomes a disincentive.

These disincentives, these problems, apply to Alaska as well as to other ports of the United States. In addition, I believe you have some additional issues you need to address that other ports may not have, and that is, once a port such as Dutch Harbor or St. Paul receives the waste oil or the plastics, they must be further disposed of. Yet these are small islands, remotely located, and they don't have the facilities that the larger ports, such as Los Angeles, Houston, or New York may have access to.

You have small communities trying to support large volumes of waste generated by the numerous ships that call at their ports. That translates into very big dollars, especially when combined with the re-transport or the special disposal problems of these small communities. That translates into charging the users for the waste reception facilities, and because of the dollars involved, the ships opt not to discharge their waste there. They either haul them aboard until they reach another port, or more probably discharge the wastes at sea either in accordance with the discharge guidelines or possibly not.

Additionally, I'm sure you're finding that some of the oil wastes that you have to receive are contaminated with some sort of hazardous product; that they're not pure oil waste. I believe Mr. Daily is going to address these specific problems in more detail when he speaks. The result is further disincentives. The ports need to comply in order for the ships to be allowed into the ports, so they go with third-party contracting which makes it difficult for the ships to use. I've seen facilities located in remote sections of the harbor where maybe deep draft vessels can't even approach, so they can't use them. But then again, we get into the high cost. As a result, the ships don't use them, they go home to their governments and claim that we don't have adequate reception facilities, and they may be right.

We're taking a look at this problem this summer. I've directed the people in my division to put together a program to visit various ports in the United States, out in the Pacific, up here in Alaska, to see how well we are providing for the reception of these wastes -- to get an idea of how much waste is being generated aboard ship. We will then take these results to IMO, ask them to do the same type

of comparison, and I think we need to look internationally at MARPOL 73/78 to see whether or not it is having an effect, and just how much of an effect.

We have started enforcing these provisions, especially the plastics, by the way. We recently had our first legal case and civil fine upheld. It involved tonnage that was being discharged less than 12 miles off shore, and we actually collected half the maximum penalty -- we collected \$12,500. Additionally, one of our vessels in boarding a fishing vessel (a foreign fishing vessel out here in the Bering Sea) -- when they went aboard, the crew cut their net. Not only were they fishing in violation, they were also in violation of Annex 5. They have been assessed the maximum penalty of \$25,000.00.

Leaving Annex 5 momentarily, I'd like to address two other things that the Coast Guard has been involved in that I believe have a direct effect on the pollution and pollution response in the Bering Sea area. And that, Number 1, is the 1989 International Convention on Salvage.

This is basically a civil agreement. The Coast Guard was involved in that we are the negotiator at IMO. The agreement involves incentives for salvage. Under the current program, salvors usually work on a contract of "no cure, no pay". For those nations that ratify the International Convention on Salvage, salvors would have the right to expect at least cost recovery for undertaking a salvage operation with a reasonable expectation of completing it.

Additionally, a salvor would be entitled to an enhanced salvage award based on the prevention on environmental damage from oil or other type of pollution. In a new concept that was adopted, the ship as well as the cargo owners share a responsibility, in that the cargo owner would contribute significantly toward the enhanced salvage award based on prevention of pollution.

Secondly, very lightly, I would like to touch on the United States-USSR agreement on combating pollution in the Bering and Chukchi Seas. This has been spoken to previously. It was signed on the 11th of May 1989. The joint contingency plan implementing this agreement was signed by the Coast Guard and the Soviet counterparts, on the 17th of October 1989. And the Coast Guard's 17th

District together with the Soviet counterparts are currently working on the operational annexes for implementing this agreement. Following the development of the operational annexes, we can expect to see further joint exercises between our two nations.

The purpose of this agreement is to prevent oil spills in the area of concern -- to identify potential or real oil spills in the area of concern. Hopefully, this would solve or help solve the issue that was brought up by Mr. Naumov -- the Canadians did not notify the appropriate Soviet authorities of the pollution from their vessel. It also addresses joint response to actual pollution incidents in either nation's waters, or international water which threaten the shores of the other nation.

I would like to address one issue of pollution that I don't think will affect this area to a great extent, although it's one that I don't believe has been mentioned before, that we are currently looking at in some detail, and that is biological pollution by non-indigenous species being introduced into one geographic area from another. In particular, this is of great consequence in the Great Lakes where the zebra mussel has been introduced and is having a heavy economic impact. Although we are looking deliberately and very quickly at the Great Lakes, we want to expand our research and our concern to saltwater areas. We have already received letters from environmental groups within the State of Alaska asking us to take a look at Prince William Sound and other areas within the State of Alaska as to whether or not this could be a problem in this area.

In closing, I would like to just state that Coast Guard involvement in pollution is not restricted to Annex 1 and Annex 5 of MARPOL. We're also involved in the fisheries enforcement aspect, oil spill prevention and response, other types of pollution. I would like to state that we are not involved in oil or trash disposal after it comes ashore from the ships unless it gets into the water somehow, nor is the Coast Guard involved in the salvage of wrecked vessels after the oil and hazardous materials have been removed. I'm not saying those are not a problem; I'm not saying the Coast Guard's not concerned. What I'm saying is, we do not have a statutory mandate to be involved in those areas, and I know those are areas that are of great concern to you. With regards to the first one, further disposal of

oil and garbage from Annex 5 when it is received at the reception facilities, I believe that's something that we need to address as a multi-agency and international problem.

GARY DAILY

Harbormaster, City of St. Paul, Alaska

I'm presently the interim Harbormaster at the Port of St. Paul in the Bering Sea. Prior to that, I was the Port Director for the Port of Dutch Harbor on the Aleutian Islands. That is an example of what MARPOL Annex 5 is all about. Those ports that claim they are really working toward the solution to MARPOL issues with those cute little three yard 'dipsty dumpsters' really haven't an idea of how the game is played in the Bering Sea.

While we applaud and we support the concepts of MARPOL Annex 1 and Annex 5, most of the Aleutian Island communities and the Bering Sea ports have major problems with the implementation of MARPOL. Frankly, we have yet to be able to deal with it.

The MARPOL regulations seem to us to have been adopted without any concern as to how coastal communities are going to implement the new rules. The regulations appear to preclude us of any options. Now, where landfill space is at capacity and there is insufficient topographically or environmentally acceptable areas to expand, incineration might appear to be the only option. For example, there is one small incinerator made by a Norwegian company that is used on an American factory trawler. While it is legal to use this incinerator at sea, it is illegal, according to the United States Environmental Protection Agency, to use that incinerator on shore. However, with EPA regulations becoming more stringent, it might appear that shoreside incineration cannot be counted on as the answer.

One area of major concern to small communities, generally the unincorporated community where local or village government runs the community, is that we simply do not know what's going on in the landfills, especially in communities that have canneries or accommodate ships.

I would like to illustrate this point with an example from the Port of Dutch Harbor. One day I saw multiple oil barrels on the city dock next to a factory

trawler. When I asked the Captain what was in the oil barrels, he told me, "waste oil." However, the local fueling companies advised me that, on an American factory trawler, there are 70 different types of lubrication oils necessary to run that ship. In the bigger class ships, the 300 to 600 foot length ships, the number of hydraulic oils and engine oils exceed 125 different types of oils.

I received complaints from men working in the engine room, that they had lost the skin on their legs from their knees to their ankles; the skin literally came off. It appeared that the mixing of different kinds of lubricating oils and the additives in those oils may have caused the terrible skin rash that these men received. Now, that apparently is waste oil, and when we in our ports test the oil, the testing kits do not reveal the high degree of additives or solvents. We don't think that's right.

The Port of Kodiak presently has 2200 fishing boats. They gather about 60,000 gallons of waste oil a year. They put that waste oil in 5,000 gallon tanks and they ship those tanks to Tacoma, Washington State. One of those tanks was contaminated with a solvent from an unidentified source, and it cost the Port \$16,000.00 to transport it and get rid of the oil.

The Port does not know how much of that oil they missed. The Port of Dutch Harbor sells in excess of 80 million gallons of fuel every year. The Port figures it should be getting back approximately one-half million gallons of waste oil. I am told by the petroleum companies that the Port gets back less than 250,000 gallons of waste oil, which implies that 300,000 gallons of oil is not accounted for. We suspect that with five nations fishing in the unregulated zone, plus some of the American ships, it might be going into the sea.

Ports get all types of garbage. The Community of Dutch Harbor, the City of Unalaska, has a population of 2,000 people; a small community. However, with over 4,000 ship port calls in Dutch Harbor, that community takes the equivalent garbage from 40,000 people. That would be like adding to the Fairbanks population of nearly 30,000 people an additional 600,000 people moving into Fairbanks today and leaving their garbage. Or, for those of you that have been to Anchorage, it's like putting four million more people in Anchorage with the same garbage facility.

There are, however studies underway in Kodiak Island Borough, the City of Unalaska, Dutch Harbor, the Aleutians East Borough, and the Bristol Bay communities. All of us are engaged in some type of study to determine what our options are and how we might be able to comply with the MARPOL regulations. We presently find little direction from anyone. Each city must become its own leader. And as my friend Captain Thompson said, "If you charge sufficient money to cover the cost of unloading this one factory trawler, who is going to pay for that?" If you place a sufficient charge on him, some ships and some fleets will look at this as a disincentive, and they will continue to dump at sea.

As Professor Oleg Kolbasov said in his remarks yesterday, the environmental situation in our country is serious. We don't know how to correct the problem as yet, and I can assure you as a Port Director, I don't either.

I also want to discuss what to me is the ultimate littering insult to a community. On St. Paul Island alone, there are over 8 ship wrecks scattered within the city limits. Some vessels we can identify, such as the small ship or small crab boat *Alaska Monarch*. Other we don't know who they were. Various pieces of unidentified barges and other ship debris remain on our beaches. And they're in our seal and bird rookeries.

At this rate, we expect that at least another 12 to 15 shipwrecks, within the next 10 years, will be aground on St. Paul Island. One ship, the *Royal Maru No. 2*, been there over 10 years. She is right next to one of the most productive bird rookeries in the world.

Another is the *Terminator*. It went aground a year or so ago with Chief Warrant Officer Victor Sarmientof. We haven't had much of a success story yet in removing these vessels. In fact, we haven't removed any.

The insurance companies declare the vessel a total loss, and everyone simply walks away, leaving the community with the garbage. One ship, the *All Alaskan*, grounded in 1987, still clutters the beaches of St. Paul Island with over one-half million pounds of still rotting crab aboard.

Another example is the Japanese ship *Swallow*. She grounded one year ago in Dutch Harbor, downtown in the city limits. Pamela Bergman worked on that with us in the salvaging of what birds she could clean and wash, and take care of. This vessel was declared a total loss. The owners and the insurance company prepared to walk away, and we were given notice to that effect. The City of Unalaska, Dutch Harbor, took extreme issue with this. We went to the Japanese Counsel, we went to Lloyds of London, the insurance company. We frankly embarrassed the owners, the government of Japan, and the insurance people with a high profile media blitz. Unfortunately, our ship grounded about one week prior to the grounding of the *Exxon Valdez*. So, our media blitz was carried out in the country of Japan. We felt that, if this ship was on the beach in Hokaido or Tokyo, or Santa Monica, California, it would probably not be left there for more than one week. Nine months later, we were able to remove the *Swallow* from the beaches of the Aleutian Islands.

We feel that the law must be changed. We simply somehow must hold the ship companies, the owners, accountable for leaving garbage on our beaches. Last evening, Mr. David Struhs, in his speech, stated that, "While perceptions are important, so are misconceptions." The time has come to stop moving pollution around, trying to control it, we must prevent it. And above all, I think we need to state, that at the moment the MARPOL I and MARPOL 5 Annexes are not working very well in the Aleutian and Bering Sea communities.



Sand dunes in Kobuk Valley National Park, Alaska. The dunes stand as high as 150 feet and hold permafrost wedges and fossils of Ice Age mammals. National Park Service photo.

DINNER SESSION

INTRODUCTION OF FRANK BRACKEN BY DINAH BEAR

Our dinner speech will be given by the Under Secretary of the Department of the Interior, Mr. Frank Bracken. As you know, the Interior Department, is a co-sponsor of this conference. Many of the people in the department have been very supportive of the conference throughout the planning period, and we're delighted this evening to have the Under Secretary of the department with us.

Mr. Bracken has had a long relationship with the department. He was an associate solicitor for Congressional affairs in Interior back in 1972 and 1973. He's been in private industry for approximately the last 18 years and was chosen by President Bush to come back to Interior as Under Secretary approximately a year ago. He'll be talking about Interior's role in environmental protection in general and also in relation to the Bering Sea.

FRANK BRACKEN

Under Secretary, U.S. Department of the Interior

Certainly, it's nice for me to have a chance to be back in Alaska and back in Fairbanks. As Dinah said, I was in the Interior Department back there in the Nixon Administration and time-wise that was quite a while ago; it was actually 20 years ago when I started. But it doesn't really seem like it was that long ago. We have a lot of the same issues that I thought we'd solved back in those days, and they're still there, and we're working on them again.

I came up to Alaska back in those days. We were working on the settlement of the Native Claims and picking additions to the National Parks and Fish & Wildlife Refuges and Public Lands and so-on. It's good to be back and be involved in the Department, and be back in Alaska.

I also am happy to be at this Conference on Shared Living Resources of the Bering Sea. It's an honor for me and certainly a pleasure to be here. As the Interior Department representative, the Interior Department is pleased and proud to be a co-sponsor of this conference with the Council on Environmental Quality, NOAA, the Center for Marine Conservation, and of course the State of Alaska. We look forward to working with our Soviet counterparts who share in our commitment to preserving the Bering Sea.

This certainly is a critical area for both the United States and the Soviet Union. It's extremely rich, with cultural resources that uncover man's migration to a new continent, and it's just as rich with the natural resources that support our societies and our wildlife habitat. Certainly this is a region that must be revered; must be researched, but above all, it must be protected.

In that spirit we've gathered this week to examine our legal and our administrative responsibilities in this bilateral effort. We must establish consistent policies to guide our expertise in this area and we must remain committed to cooperative programs aimed at furthering our preservation goals.

The Department of the Interior is the lead United States agency on preservation issues. President Bush has charged the Department with the stewardship of our nation's resources, and we in the Department are committed to providing the support needed to carry out that stewardship mission in all areas, and particularly in this area, the Bering Sea.

For many years, the Department of the Interior has been very active in the State of Alaska, and we continue to enjoy a very solid and productive working relationship with the state. Our challenge is to broaden our research scope across the Bering Straits. Fortunately, that goal is being realized more and more every day.

Since the Environmental Protection agreement signed by the Soviet Union and the United States 18 years ago, the Department of the Interior has participated in many bilateral conservation and management programs. Resource protection and development comprise our stewardship responsibilities and the Bering Sea region is home to many of our natural and cultural resources that are under the Department's jurisdiction.

Many of the Interior's bureaus are heavily involved in the mission of the State of Alaska and all of us gathered here today. Already during this conference you've heard from the Fish and Wildlife Service and the Office of Environmental Affairs. They have talked about marine mammals and problems with pollution. Tomorrow the Minerals Management Service will discuss this region's oil and gas development. In addition, however, there are many other areas in which Interior has a very direct involvement.

Our mission as a department also includes a commitment to preserving the region's cultural significance. The Bureau of Indian Affairs, which is part of the Interior Department, works with the Native North Americans, the Eskimos and the Aleuts, and all of the other groups in an effort to teach all Americans about their true cultural heritage; language, clothing, cultural ceremonies, all of these help us learn more about the first people to set foot on this continent.

There is much to learn about our history from this region. The National Park Service is studying the Eskimos of today, just as they are studying the past that has been uncovered by archaeological excavations. Each day, we understand something new about the crossing of the land bridge that connected our countries more than 10,000 years ago.

The Department of the Interior recognizes the need to preserve the land that holds so many secrets of our joint past. In the last few decades, we have designated much of Alaska as National Parks and National Preserves. Yet, we cannot learn the complete story of the land bridge unless we study the other side. There is more to learn from both countries, and that is why we are committed to coordinating research efforts with our Soviet counterparts as we join forces to understand the mysteries of the past.

Six months ago, Secretary Lujan met with Deputy Chairman Sokolovskiy to discuss the first steps in establishing the Beringian Heritage International Park. This park will cover many of the areas discussed at this conference. The Deputy Chairman was presented with the first reconnaissance study for the park which explains how the United States and the Soviet Union can continue to realize our goal for increased understanding. And of course, last week, President Bush and President Gorbachev signed a joint agreement announcing the intention to create the Beringian Heritage International Park. This agreement also calls for closer cooperation by the environmental organizations of the United States and the Soviet Union.

The International Park symbolizes a tremendous bilateral effort covering many significant natural areas. These include: natural resources, migration of man over the land bridge, archaeological sites, and many more recent developments. The goals of the park are clear: promote cooperation among our nations, preserve natural and cultural sites, and provide opportunities to administer the region's resources.

International cooperation is critical. In North America, we are well on our way to achieving common goals among nations. For example, the North American Waterfowl Management Plan between the United States, Canada, and Mexico is a

major force in our efforts to preserve our continent's delicate and unique wetland areas. We are committed to President Bush's "no net loss" of wetlands objective, and all three countries are working to achieve that goal.

At the same time, we are working closely with our next closest neighbor, the Soviet Union, which is only miles away. By promoting cooperation among our two countries with the Beringian International Park, we are sending a signal that environmental and cultural interests do not respect national boundaries. The preservation of natural and cultural resources is a goal for all of us. We must study the evolution of flora and fauna, analyze the migration of polar bears, walruses and seals, and gain cultural insight of our common ancestors. These are the issues we must address and the questions we must answer.

As the 1990's begin, the American and Soviet conservation specialists are planning a cooperative strategy for the new decade. Beginning later this month, about 35 participants from each country will meet to define their joint conservation priorities for the Bering Sea region. We must emulate this successful relationship in all areas of resource protection and development. From cultural studies to oil drilling, our countries must be committed to working together on the many resource sharing opportunities.

Throughout the world, we see many examples of international cooperation, including trade, cultural exchange, immigration, economic assistance, and environmental awareness. This is why this conference between the United States and the Soviet Union on Shared Living Resources of the Bering Sea is so important. Cooperation between our two countries is essential not only for the world today, but, more importantly, for future generations.

INTRODUCTION OF DAVID SHAKESPEARE BY DINAH BEAR

Over the past couple of years, several major non-governmental organizations have become active with their counterparts in the Soviet Union. They include organizations such as the Sierra Club, which has had a long standing relationship with Area 11 of the US-USSR Environmental Agreement, the Natural Resources Defense Council, and others.

The National Audubon Society has chosen to focus specifically on the Bering Sea region as a focus for their cooperation with the Soviet Union. This evening, we're going to have a visual presentation and a short discussion of that involvement by David Shakespeare. Mr. Shakespeare has a B.S. in Environmental Science from the University of Massachusetts, and is currently working on his Master's thesis in the Marine Policy Program of the University of Delaware on an area related to Shared Living Resources of the Bering Sea. He has been working with the Audubon Society on the Beringia project.

DAVID SHAKESPEARE

National Audubon Society

It's certainly a pleasure and an honor to be speaking to you tonight. I'm attending the Conference on the Shared Living Resources of the Bering both as a student in the Masters in Marine Policy Program at the University of Delaware and as a representative of the National Audubon Society.

As a graduate student, I'm very interested in the topic of the Shared Resources of the Bering Sea Region. As a representative of the Audubon Society, I've been asked to present to you tonight a slide show. The slide program is an introduction to the Beringia Conservation Program as developed by the Alaska-Hawaii Regional Office of the National Audubon Society.

The National Audubon Society, in partnership with the Magadan Regional Nature Conservation Committee of the Soviet Union, and joined by the World Wildlife Fund of the United States and the Quebec/Laborador Foundation, has launched the Beringia Conservation Program to encourage international cooperation in wildlife conservation, environmental protection, and sustainable development in Beringia.

Among the actions agreed to by the program partners are: 1) preparation of an environmental profile of Beringia to examine regional and site specific environmental issues and potential strategies for dealing with them; 2) organizing an intern exchange program to give young people practical experience in environmental conservation; 3) promoting joint US/Soviet walrus, polar bear, and migrating bird conservation strategies with strong participation by Native peoples of both countries; 4) identifying projects to promote sustainable development consistent with the conservation strategies of both the Inuit Circumpolar Conference and the International Union for the Conservation of Nature; 5) promoting agreements that provide local residents with jobs in natural resource management and nature-oriented tourism that is compatible with local cultures; 6) supporting establishment of an international park and world heritage site, and also proposing and promoting a Beringia International Marine Biosphere Reserve.

To promote and explain the program, the Alaska-Hawaii Regional Office of the National Audubon Society has produced a narrated slide show, and in July will have a bilingual booklet outlining the many plans for cooperation ranging from training exchanges to site-specific conservation strategies.

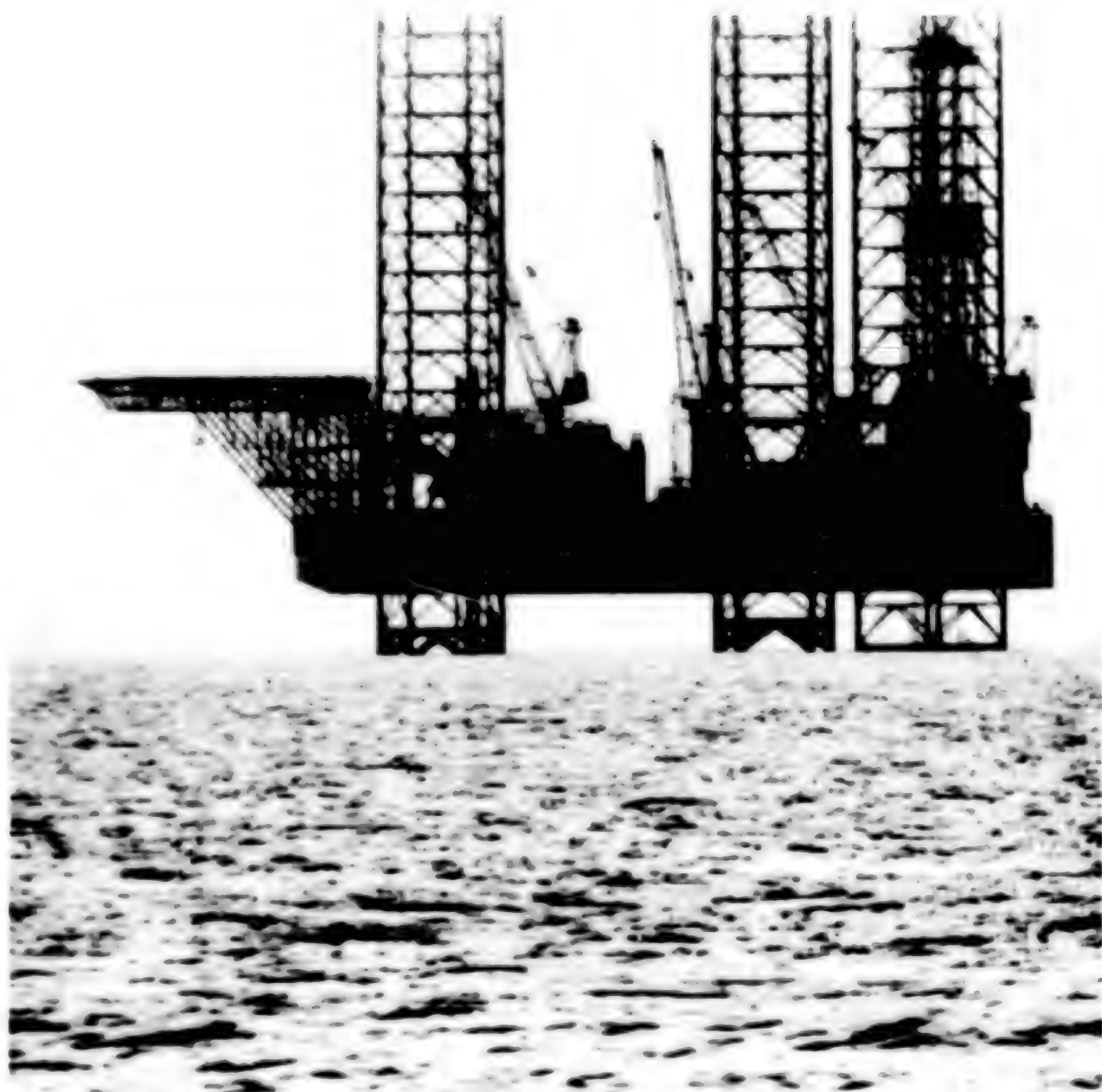
For the benefit of our Soviet guests, I'll briefly describe the content of the slide show. It will begin with a brief description of the human and natural history of Beringia. Beringia is situated along the Arctic Circle. It is an area that encompasses Western Alaska, Eastern Siberia, and the waters of the Bering and Chukchi Seas.

This will be followed by a section on the unique biological features of Beringia including the numerous bird, marine mammals, and terrestrial mammals. The next section will describe some of the environmental problems facing the region, including arctic haze, oil and gas development, and commercial fishing operations, which may be over-harvesting the region.

Finally, the slide show will examine the trend of increasing U.S./Soviet cooperation in Beringia and the prospects for the future. After the slide show, I'd be happy to answer any questions you may have regarding the slide show and Audubon's Beringia Conservation Program. At that point, I'll also ask Jim, a consultant for the Alaska-Hawaii regional office of the Audubon Society to join me in answering your questions. Jim has worked extensively on the Beringia Conservation Program and was instrumental in signing a Memorandum of Understanding between Audubon and the Magadan Committee for the Protection of Nature.

[Editor's Note: The slide show was not recorded or transcribed.]

[Editor's Note: There were no questions.]



Jack-up exploratory oil drilling rig. Center for Marine Conservation photo.

PANEL FOUR
OIL AND GAS DEVELOPMENT IN THE BERING SEA

INTRODUCTORY REMARKS BY DINAH BEAR

This morning, we're starting off with a panel on Oil and Gas Development in the Bering Sea and Chukchi Sea Areas, something that is clearly controversial. Our Chair for this panel is Scott Farrow, who just recently joined the Council on Environmental Quality. Scott was in Moscow two weeks ago for a meeting between American and Soviet experts in Oceans Policy. Prior to coming to the Council on Environmental Quality, he was an associate professor of economics at the School of Urban and Public Affairs at the Carnegie-Mellon University. He is a member of the National Scientific Advisory Committee for the Outer Continental Shelf, which is managed by the Department of the Interior. He has co-authored a book on managing the Outer Continental Shelf lands, Oceans of Controversy, which was published this year.

OPENING REMARKS

SCOTT FARROW

Senior Economist, Council on Environmental Quality

As Dinah indicated, I'm now the Senior Economist for the Council on Environmental Quality, and it's my pleasure to be the moderator for this panel. I think a topic of this kind often needs a moderator instead of a chairperson. We have a highly qualified and very personally involved panel of speakers this morning to present both the Soviet and American viewpoints. I will introduce each of the panel members shortly. As a professor, however, I can't resist the chance to make a few comments, and I will try to make them brief.

I want to outline the energy resource setting for the legal and administrative regimes in the global energy picture. The Soviet Union and the United States, in that order, are the two largest oil producers in the world. And the Soviet Union is the second largest exporter after Saudi Arabia. As the existing resource base in the Soviet Union and America is consumed, frontier areas such as the Bering Sea become important potential sources of oil, and I emphasize "potential sources", for each country. Furthermore, innovative cooperation between these two countries may change the status of these resources from potential to recoverable and result in the transfer of technology. For instance, just last month an agreement was signed between an American firm and the Soviet government to conduct geologic exploration in the Chukchi Sea.

So much for the easy part. Each country, however, is familiar with regional conflict over energy development, and in the United States, this is sharply focused on offshore energy development. Offshore oil and gas production seems to provide a policy setting where issues about the environment, the economy, and energy, the 3-cubed equation, seem to intersect in a precedent-setting way.

If no potential for oil and gas existed, there would be no energy component in this equation and a lot less conflict. We've heard in earlier panels about the living resource wealth of the Bering Sea. I want to speak briefly to the potential energy wealth contained beneath the Bering Sea.

The first somewhat obvious point is that nobody knows the actual extent of the energy resources beneath the Bering Sea. There's a wide range of possible oil and gas resources ranging from zero to large quantities. Many people look only at the average or mean estimate of resources expected to be present. A recent report estimated the average resources of the American side of the Bering Sea at about 14 billion barrels of oil.

To present some further context for these data, the proven reserves of oil on the North Slope and the Cook Inlet Fields in Alaska are estimated to be approximately 7 billion barrels. We've seen some maps of the Living Resources of the Bering Sea. I thought I'd provide you some idea of the major sedimentary

basins where the potential oil and gas resources exist in the Bering Sea. There is North Aleutian Basin, St. George, Navarin, and Norton.

I've mentioned the average resources, but clearly energy decisions are not always driven by average estimates, just as sports games are not driven by average values; they're not driven by seeking a tie game, which is in fact the average outcome of sports playing games. In fact, the history of exploration on the North Slope and in the North Sea of Europe indicates that many failures may go into finding even very large deposits. There were approximately 50 dry wells before the North Slope was discovered, and almost 200 dry wells before the North Sea discoveries.

While I'm not familiar with Soviet estimates of their resources in the Bering Sea, several prospective offshore basins have been studied. There are some extensions offshore of onshore fields in the Anadyr and Khatyrka Basins, and there's more extensive work on the Sakhalin area.

To turn to economics, it may be a surprise to find that economics is important even in the assessment of resources. A somewhat dated example relates the potential supply of oil from offshore U.S. sources to the price of oil. And back in '87 at a price of \$14.00 per barrel, the Minerals Management Service estimated that there were no economically recoverable resources in the Alaska area. But as you moved up through higher prices, the expected resources in the Alaska Region became a significant component of potential resources. So this is clearly one place where economics interacts with the legal and administrative management of resources.

I'm not quite going to let you go yet. There's a recent area of research in the United States in the field of law and economics. And I want to briefly survey some ways that economics is intermixed in the administrative regime. As will be more fully explained by some of our speakers, the United States offshore system involves private companies buying a limited type of property right: a lease from either the state or the federal government. The terms of the lease include a specific geographic location, royalty payments to the government, and very often restrictions, called stipulations, on the activities that the company can undertake and which might affect the environment. The leases are purchased in an auction; a

market-oriented mechanism to allocate the lease to the highest bidder with the government receiving the high bid. The definition of the lease rights, and the price paid by the bidder, are one key interaction between economics and the legal regime.

Law and economics also strongly interact in the area of liability and insurance. Exxon Corporation, in particular, and the oil companies, in general, are very aware that their legal liability for oil spills is very much like a large, one time tax. The limits, if any, of that liability and its extent, which now includes damages to publicly owned resources, and possibly the feeling of harm by individuals many thousands of miles away, are another place where law and economics interact.

The companies that produce oil and gas from the federal offshore area also pay into two government funds, very like insurance funds. One fund compensates fishermen for damaged equipment and the second fund provides for pollution clean-up in the absence of action by a potentially responsible party. As I'm sure someone will point out, the amount of the clean-up fund is approximately one-tenth of the amount spent to date to clean up from the *Exxon Valdez*.

My final example relates to the scheduling of the auctions. In that planning process, monetary costs have been placed on damages to the environment along with the revenues from resources extraction. While there are very substantial debates about these data, an economic framework is being used as one element of structuring the auctions that interact with the management of the Living Resources of the Bering Sea.

I'd now like to introduce each of the members of the panel, in the order in which they will speak. Carolita Kallaur is the Deputy Associate Director of Offshore Oil and Gas Leasing of the Minerals Management Service. The second speaker is Bill Cohen. He is the chief of the Litigation Section in the Environment and Natural Resources Division of the Department of Justice. The third speaker will be Professor Oleg Kolbasov, from the Institute of Law. The next speaker will be Eric Smith, who has worked with the Trustees for Alaska and the Natural Resources Defense Council, followed by Svetlana Kravchenko, a professor of law from Lvov University, and last but not least, Mark Wooster, an assistant attorney general in the Oil, Gas, and Mining Division, Alaska State Department of Law.

CAROLITA KALLAUR

*Deputy Associate Director of Offshore Oil and Gas Leasing
Minerals Management Service
Department of Interior*

The purpose of my presentation this morning is to cover the procedures available to resolve conflicts between offshore oil and gas activity and the protection of living resources, to cover our experiences to date in the Bering Sea, and what our ideas are for the future.

Our primary statute for managing the hydrocarbon resources of the Outer Continental Shelf is the OCS Lands Act. It allows for the awarding of rights to private concerns to explore for, develop, and produce oil and gas on the Outer Continental Shelf if these activities can be carried out in an environmentally sound manner. The Lands Act calls for development of environmental and safety regulations to minimize risk of damage to the human, marine, and coastal environment, and to minimize conflict with fishermen and other ocean users from offshore oil and gas drilling and production.

The Lands Act is to be carried out in concert with other important environmental statutes such as the National Environmental Policy Act, the Endangered Species Act, the Marine Mammal Protection Act, the Migratory Bird Treaty Act, and the Coastal Zone Management Act. Whereas NEPA has as one of its major objectives ensuring that environmental considerations are taken into account, other environmental statutes could be considered as more "single purpose" in focus, such as the Marine Mammal Protection Act.

The merging of these different acts in making decisions reveals interesting results in determining what constitutes the appropriate balance between the development of domestic oil and gas and protection of living marine resources.

The challenge we face in managing the hydrocarbon resources of the OCS is that nature has sometimes allowed oil and gas to form in areas where important living resources also reside or frequent, thereby creating a potential conflict. The framers of the Lands Act clearly saw this challenge, and in setting out the

requirements to be followed, ensured that the value of marine life was to be an important component in making decisions, and required numerous consultation opportunities throughout the leasing, exploration, and development phases to help in this regard.

They also granted the coastal state, in this instance Alaska, a strong voice in helping the Minerals Management Service both define and achieve the balance between the need to develop our domestic oil and gas and protect living marine resources. Dennis Kelso spoke to the accomplishments of federal/state cooperation yesterday. Resolving these conflicts in a democratic society involves not only scientific technical or legal judgments, but involves the much more difficult arena of personal and institutional values regarding the importance of one activity over another. The level of risk acceptable to one individual may be totally unacceptable to another. These judgments are also greatly influenced by events external to the offshore program, such as last year's *Exxon Valdez* spill and OPEC oil embargoes of years past.

I'll now try to give you a snapshot of what has actually taken place in the Bering Sea. Leasing in the Bering Sea was first considered in the early 70's as part of an overall national response to the OPEC oil embargo and the resulting economic shock. Congress, as well as the administration, recognized the need to expand our search for oil and gas outside of the Gulf of Mexico and California, but wanted at the same time to strengthen the level of environmental protection afforded and the role of the coastal states in making decisions. Congress passed major substantive changes to the Lands Act in 1978 to accomplish these purposes.

Eventually, the plans for early sales in the Bering Sea were cancelled and leasing did not actually take place until 1983 when sales were held in the Norton and St. George Basins, and in 1984, in the Navarin Basin. In preparing for these sales the MMS followed the procedures of the various statutes I mentioned earlier, which aided us in the identification of potential conflicts and their resolution. We also funded numerous environmental studies on living resources in the Bering Sea, and to date have spent nearly \$65 million. At that time in 1983, expectations were high on the part of both the oil companies and the federal government as to the resource potential of the area. The economic climate was right for oil and gas

companies to invest large amounts of money in the exploration process. Oil was selling, in 1983, for \$26.00 a barrel in contrast with today's price of \$14.00.

The primary environmental concerns regarding marine resources included the effects of exploration and development activities on fishery resources, including salmon, crab, herring, and bottomfish, as well as on marine mammals and marine and coastal birds. These concerns were addressed through a combination of tract deletions as well as by means of special mitigating measures referred to as stipulations. For example, in the case of the St. George Basin sale, the Minerals Management Service narrowed the area to be studied in the environmental impact statement and eventually offered for lease, from a beginning point of 46 million acres, about 2.7 million acres. We also imposed special measures to ensure protection of important biological resources to protect endangered whales and to avoid physical interference with commercial fishing activity.

These measures were in addition to our already extensive set of regulations. And then following each sale, exploration plans and oil spill contingency plans were filed for approval prior to allowing drilling to proceed. We completed an environmental assessment under NEPA to identify site specific concerns and needed mitigations for each drilling plan, and conducted environmental compliance inspections of drilling on a round-the-clock basis.

The state of Alaska reviewed each plan for consistency with its Coastal Zone Management program. Eventually, six wells were drilled in the Norton Basin; 8 in the Navarin, and 10 in St. George without environmental harm or incident. The only sad note to add is that hydrocarbons were not found and all 24 wells were plugged and abandoned. Currently, we have 59 active leases in these planning areas; 6 in Norton, 30 in St. George, and 23 in Navarin. No exploratory drilling is currently taking place on these leases. The last exploration took place in 1985. This may be due to at least two factors: economic and legal.

In the mid 1980's, the price of oil plummeted, making it less attractive to explore for and eventually recover oil from the Bering Sea. The 6 active leases in the Norton Basin have exploratory drilling suspended pending the outcome of litigation dealing with aboriginal hunting and fishing rights. While no problem

surfaced with the exploratory drilling, the controversy remained. Interior was moving away from small tract selection sales to area-wide sales, increasing, in some instances, the size of the sale offering by an order of magnitude.

In 1985 during the development of the current five year program, a non-profit group, the Institute for Resource Management, convened key environmental, energy, fishing, and Alaskan Native representatives to discuss their different points of view regarding the federal government offshore oil and gas program in the Norton, Navarin and St. George areas. It purposely left out the governmental entities normally involved in decision-making: the State of Alaska and the Interior Department.

The IRM meeting resulted in a recommendation that 48 million acres of the 132 million acres available be included in the five year program. This recommendation was adopted in part by the federal government when it deleted over 50 million acres from the program covering large segments of the IRM Program and further referral requests by the State of Alaska as well highlighting the remaining areas for special consideration in our pre-lease process. There was some criticism at the time that the entire IRM package was not accepted by the Interior Department.

There is a much less positive story to tell regarding the North Aleutian Basin, also referred to as Bristol Bay. Again, leasing was proposed here back in the 70's, but was put on hold until the early 80's. The State of Alaska has consistently held firm in its opposition to oil and gas activity in this area in part because of concerns regarding living marine resources, primarily fishery resources.

Concerns raised by the State and environmental groups included the effects of oil spills and discharges on fish and the effects of oil spills and noise on marine and coastal birds, pinnipeds, sea otters, and threatened and endangered species. MMS took the following actions to address these concerns: it deleted 83 percent of the area from consideration, and undertook a precedent setting consultative effort with the State of Alaska and United Fishermen of Alaska to address the question of adequacy of information on fishery resources in the North Aleutian Basin.

We also imposed extensive limitations in the form of lease stipulations. Bids were received in January 1986 and were finally opened after extensive litigation in October 1988, resulting in 23 leases being awarded. Exploratory activity is currently prohibited on these leases by a Congressionally-imposed moratorium.

Now we'll turn to the future. Plans are currently underway for a second sale in the Navarin Basin and EIS hearings are scheduled for later this month. Work is also underway at a much slower pace in St. George. We have also started work on the development of a new five year program which will cover the years 1992 through 1997. Our current estimate of undiscovered economically recoverable oil and gas resources in the Bering Sea are less than optimistic under current world oil prices, and also taking into account the discouraging drilling that occurred during the 80's. Litigation dealing with subsistence rights and aboriginal rights is outstanding in both the Norton Basin and North Aleutian planning areas.

Consideration is also being given to the possibility of buying back leases in the North Aleutian Basin. Congress has asked that a study be conducted of the cost of such a buy-back. We anticipated that the new five year program will be markedly different from past programs, and being designed to truly reflect the needs of the 90's and the years thereafter.

The new program will definitely have a longer term focus, recognizing that resolving issues take time and that the program is highly susceptible to changes in economic conditions and public sentiment. We very much try to avoid crisis management and ad hocism, though we have found that often things are out of our control. We are trying to learn from both the mistakes and successes of the past. We are placing even greater emphasis and close coordination with the coastal states and are attempting to forge more of a partnership with other federal agencies who share responsibilities in the marine area. We are open to new approaches to conflict resolution, be it a version of the approach tried by the Institute for Resources Management or something totally new. We are mindful of the strongly held views of the many constituencies we interact with, and that we need an appropriate mixture of science, technology and social science to be able to forge a compromise that addresses all the needs of the American people for the longer term.

WILLIAM COHEN

*Chief, General Litigation Section
Environment and Natural Resources Division
Department of Justice*

It is an honor and thrill to be here this week with all of you as part of this important Conference on the Shared Living Resources of the Bering Sea. I'm going to focus this morning on how the NEPA process fits within the scheme of OCS oil and gas leasing and development.

When I talk about the National Environmental Policy Act, NEPA, I'm frequently reminded of a parable which comes from a book called Design with Nature by Ian McHarg. In McHarg's parable he presents the setting that there's been a nuclear holocaust and all life on earth has been destroyed except for two bacteria, one on one side of the earth and the other on the other side of the earth. And over the course of millions of years, these two bacteria finally meet, and they look at each other, and they realize that it is up to them to start the whole evolutionary process from scratch. And at that very moment, they each say, "This time, no brains."

NEPA became law on January 1, 1970. It was a time in the country that there was a feeling that we were on this treadmill to oblivion; we were destroying the oxygen sources on the earth, we were polluting the oceans, we had had a terrible oil blowout in the 60's off Santa Barbara, and it was also a time that a little book was gaining a tremendous amount of credibility and impact in the country. The book of course was Silent Spring and it's author Rachael Carson. It was also a time, which I remember very distinctly, of a bumper sticker that you could see going around the country on a variety of cars, and the bumper sticker said, "The meek don't want it."

And NEPA came into existence on January 1, 1970. It's a statute with which I'm sure all of you are somewhat familiar. It requires, among other things, a detailed environmental impact statement for major federal actions significantly affecting the quality of the human environment. The statute basically said, "Let's think; let's analyze." The statute was pretty broad and sweeping, and it was

intended to be broad and sweeping, because I don't know of another federal law which requires the breadth of analysis that NEPA requires. It requires an interdisciplinary approach, to look very broadly at the implications of federal proposals for action. It also requires looking at alternatives to the proposal and the environmental implications of the alternatives.

It doesn't dictate a particular result. Indeed the federal decision-maker may choose an option which is not the most environmentally desirable, but he will make a knowing decision. He will be aware of the environmental implication of whatever decision he makes.

The very purpose of NEPA, of course, is not to prepare wonderful environmental documents. It's to result in enlightened decision-making; better decisions; wiser decisions. And of course, the mechanism for that is the preparation and analysis of the environmental impact statements so one is aware.

When EIS's are prepared, the environmental impact statement, there are various stages the agencies go through before they get to the final environmental impact statement. The world of the EIS begins with scoping, where the agencies consult with a wide variety of other agencies as well as the public to discuss how broad an environmental impact statement should be; what should be covered in this environmental impact statement.

Following the scoping, the agency prepares a draft environmental impact statement and then the draft is circulated and made public. There are opportunities for public comment on that draft impact statement. Then, on the basis of the draft impact statement and the comments received, the agency prepares the final environmental impact statement.

One of the most critical parts of an impact statement is the discussion of alternatives to proposals and the environmental implications of each of those alternatives. One of the very early outer continental shelf oil and gas leasing cases helped to define how an agency should focus on alternatives. Way back in 1972, the court looked at an environmental impact statement on oil and gas leasing. In many respects, that impact statement was very good, but in one respect with

regard to alternatives, the court found it deficient. This was in an early time when everyone was just trying to learn what was required under NEPA. And the court said that the Department of Interior didn't look broadly enough at alternatives. The Department of the Interior did an outstanding job looking at alternatives it could implement. The court said though that Interior was writing this impact statement for the public, for the Congress, for the President, and it needed to consider all reasonable and viable alternatives including those options over which Interior had no authority and no control.

The court made a point though that it wasn't requiring the consideration of every conceivable alternative, it was applying a rule of reason. But there were some reasonable options outside of the control of the agency and new law was made with that decision in terms of how agencies should look at alternatives.

The very first OCS sale in Alaska was in the Gulf of Alaska. The State of Alaska sued the United States over that sale. One of the critical issues in the case related to lack of information, lack of data, and ongoing studies. The argument presented by the State and by other federal agencies to the Department of Interior was, "You should wait until we get some more information, wait until some more studies are done."

The record made by the Department of the Interior had dealt with that notion of waiting. The environmental impact statement pointed out that there were lots of ongoing studies and enumerated on those studies. It also pointed out areas where it did have data gaps. The Secretary of the Interior pointed out in the record that he had considered this whole realm, the notion of waiting or not waiting. But Congress put the responsibility in his hands to do the weighing and balancing, of moving ahead with the OCS sale or waiting. All of that information was pointed out in the environmental impact statement. The court said that "that's okay; that's a knowing decision". The decision-maker was aware of data gaps, was aware that there was a lack of information, that it's pretty rare that one has perfect information on anything. There are almost always information gaps. The very nature of the scientific process is to look, and examine, and explore, and see if there are new ways to explain things. Thus, under the circumstances of this case, the Department of the Interior met the requirements of NEPA.

The NEPA process, as you can see, is really a two way street. People comment. There are lots of opportunities for participation in the process: the early scoping sessions before the draft EIS is prepared, the opportunity to comment on the draft EIS, and then the agency's duty and obligation to deal with those comments, to respond to them in the final EIS.

What I'd like to turn to very briefly is an actual EIS that I just picked up the other day on the Navarin Basin sale in the Bering Sea. I picked it up at the OCS Office in Alaska, in Anchorage. OCS lease sales, as you're all aware, are very controversial. They involve considerations of a variety of competing public interests. There is certainly the environmental interest, the fishing interest, the hunting interests, national security, military interests, energy concerns. It's a very difficult process to do the necessary balancing and to make a wise decision. There are risks with everything. Indeed there are risks of not having any OCS development as well as risks in OCS development. It's how you weigh and balance the risks. Congress, under the OCS Lands Act, has charged the Secretary of Interior with the responsibility for doing that.

As Carolita mentioned, every five years, the Department of the Interior comes out and they schedule sales for the next five years. With regard to that schedule, the Department of the Interior prepares a broad programmatic impact statement, looking at the entire five year schedule of sales, and looking at a variety of options, including energy conservation and alternative energy sources. And then with regard to each proposed sale on the schedule, the Department of the Interior then focuses narrower, and prepares a site-specific impact statement. This is the tiering concept, which is reflected in the Council on Environmental Quality's NEPA regulations.

So, you have a broad schedule with proposed sales. There is no commitment now to hold any particular sale on the schedule. It is a schedule of proposed sales. It narrows down to looking more specifically at individual sales, and the site specific impact statement such as this one is prepared on a particular proposed sale. To date, there have been about 15 final environmental impact statements prepared on OCS Oil and Gas Leasing off Alaska.

If we look at this impact statement, what do we see, other than it's pretty thick? It's a lot of paper, but it contains a lot of information a lot of hard analysis on the Bering Sea. It also discusses the process of getting to a final EIS. For example, we talked of scoping. Well, one of the questions that always come up is, "How easy it to get some of the small outlying communities involved in the process?" It points out in the impact statement there were scoping meetings held before this document was prepared. And where were they held? They were held in Nome, Savoonga, Gamble, and about eight other small villages in addition to Anchorage.

The document also becomes, and I'm hopeful that it is used as, a research tool, not necessarily by people focusing on the sale. When you look at the document, there is some excellent scientific analysis and a collection of a lot of hard, scientific data pertaining to the Bering Sea. It discusses fiscal considerations, geology, meteorological conditions, and oceanography, air quality in the Bering Region, water quality in the Bering Region. It discusses the biological resources: fisheries, birds, bears, seals, walruses, endangered and threatened species. A great deal of information is here.

What I was delighted to see in this document, and I've only had a chance to peruse it, was reference to a lot of information which had been gathered by the Soviet Union from its side of the Bering Sea, and use of that data, and referencing the data in this draft impact statement.

You'll also find a lot of discussion here dealing with cumulative impacts and taking a ecosystem approach. We have heard, the past couple of days, a variety of scientists talking of the importance of looking at the Bering Sea as a system. Well, you'll find that in this document, the recognition of cumulative and synergistic impact throughout the sea.

You'll also find some discussion, so there's a public awareness, in terms of Interior's continuous role with regard to OCS, not only the leasing stage, but the development stage, and the exploration stage. After leases are issued, successful lessees must submit to the Department of the Interior exploration plans, which the

Secretary can require to be modified. If oil and gas is found, before there can be any commercial production, development plans must be submitted and approved by the Department of the Interior.

With regard to exploration plans, the Department of the Interior may or may not do an environmental assessment or an EIS. With regard to development plans, in any new area of development, at least one impact statement needs to be prepared focusing on development in that region. The Department of the Interior has the authority to suspend leasing in any area for environmental reasons and indeed has done that. The Department of the Interior can and has the authority, under the OCS Lands Act, to re-acquire leases, to buy back leases.

I think what we're seeing here is a process, the way I view it, a pretty democratic process, of involving the public, involving the State, involving communities, and indeed this document demonstrates the opportunities for involvement. This is not a final EIS. This has just gone out, I think within the past week for public comment. All of you are welcome to get copies. MMS has left a sheet on the back table for anybody who wishes a copy. It's free of charge.

As many of you know, the Alaskan State Motto is "North to the Future." The NEPA process, as used in Alaska, I am sure will help ensure that the process of any type of development, any type of exploration, any type of leasing would be done knowingly and wisely.

OLEG KOLBASOV

*Deputy Director
Institute of State and Law, Academy of Sciences*

I do indeed intend to give a short presentation on the decision-making process in the Soviet Union about the use of oil and gas resources and of the environmental impact assessment process that goes on.

The brief historical review that I wanted to give you in the very beginning is that the Soviet Union began to do offshore drilling for oil in the Caspian waters soon after the end of World War II. The drilling there was using fixed oil rigs. I'd like to recall that within the context of our cooperation, with regard to environmental protection, in 1974, a U.S. delegation, a very large delegation, came to the City of Baku and looked at our offshore oil rigs. One of the oil drilling sites was visited, and we showed the U.S. delegation how we work out there. Professor Nicholas Robinson was one of the members of the delegation. We had mentioned that he was a veteran of Soviet-US cooperation.

John Busterud was the head of the delegation, and was at that time the head of CEQ. He used to get up very early in the morning. He would take his camera out to the shore to take pictures of the coastal pollution, and indeed the coast was quite polluted. We had no experience, at that time, and frankly speaking, there was no serious preventative regulation in effect at that time. But with time, the situation improved and now there is no excessive pollution. However, we have still not been able to get rid of it completely, although it must be said that the Caspian Sea, for all practical reasons is a lake really.

The Soviet Union has taken advantage of international experience gained, and started to explore for gas and oil reserves in other areas, including the northwest part of the Black Sea, in the Barents Sea, and in the northern part of the Sakhalin Peninsula in the far east. I think we now have the intention to develop the far north, which is of great concern to many people in the Soviet Union. There is a northern island up there called Yamal that is off the coast of Siberia.

An attempt to exploit the oil reserves of the Baltic Sea was foiled. These attempts were foiled because of environmental concerns. It was clear that there were reserves of oil not far from the coast of Lithuania but public discussions were held, the local public got involved. And not just the local population, but many citizens in the Soviet Union thought that it was not a good idea to look for oil in the Baltic Sea because there was such a high environmental risk.

So, around that time when all this was beginning, there was no particular procedure or order to regulate the offshore oil industry. We did have some oil drilling enterprises that were exploring for oil reserves. And then we established the Ministry of Oil and Gas Industry, which united underneath it some very major oil and gas concerns. Now, after the reforms that have taken place in the last few years, we have one ministry, which is called the Ministry of Oil and Gas Industry. All enterprises that are in the oil and gas development field come under this ministry.

We also have the Ministry of Geology, which is a service that is equivalent to the U.S. Geological Survey of the U.S. Department of the Interior, as I understand it. Our Ministry of Geology organizes and studies mineral reserves and does exploratory work when this is necessary.

In addition to this, we also have, as part of the government, a separate agency which is called the Commission for Mineral Reserves. This commission gathers information and data about mineral resources in our country, and I think that it makes decisions about whether or not it is advisable to do commercial mining of certain mineral reserves. What is taken into account here is primarily economic factors in order to make the decision of whether or not to develop the resource. This includes offshore resources as well.

So, there are the players that take part in the procedure of decision-making for offshore drilling for oil and gas. I should also say that, within the context of the system that exists and still exists up until this day, there is not much weight yet given to market-oriented mechanisms. So far, we're trying to put this whole area on a self-cost accounting, self-financing basis. As soon as reserves are found, then a decision is made as to whether or not we should go in and develop them.

Then, the financing is figured out and a certain enterprise will be assigned to go in and do the development. Of course, all this is paid for by government funds, but then it is transferred over to a basis where it has to be cost effective, self-financing.

In order to carry out exploratory work, we have not really made any particular decisions about this in the past, but I think that it's necessary to control this sort of activity as well. Back in 1970 when the Supreme Soviet of the USSR adopted a basic law regulating development in the Soviet Union, this law stipulated that any drilling anywhere in the Soviet Union requires preliminary permission. Another important law that was adopted in 1975 involves specifically mineral resources. It was adopted and now covers the entire Soviet Union.

At the present time, I think that just like in the United States, we have two phases or two stages when it's necessary to get permission from the relevant authorities. One is for exploration. The other, when we move from exploration to development. In the case of a special project, a special draft is written that stipulates the conditions under which the development can take place. And here recently, the regulations have gone into effect that require an environmental impact assessment first for the area that is proposed for development.

Of course, the Soviet Union is taking advantage of international experience that has been gained by other countries. Of course, we are aware of the experience of the United States and your NEPA law. We have studied it, and we've thought about ways in which the ideas in this law could be used and integrated into our own practice in our country. On the other hand, however, I should also note that, even up to 1969 within the context of our own system, we did have the practice, not of making real environmental impact assessments, but they were a sort of preliminary agreement about the conditions for mining development, and they were agreed upon between various ministries and agencies.

For example, if the Ministry of Gas and Oil Industry was responsible, then they were the ones that would have to come up with a project plan, and before getting permission to begin development, a so-called agreement was reached and the

other agencies and ministries involved had to give their opinions and views about the situation before development could begin.

For instance, if offshore drilling was concerned, then this had to be preliminarily agreed with the Ministry of the Merchant Marine, the Ministry of Health, and organizations involved with tourism and recreation issues. Often it had to be agreed upon also with organizations providing transportation, because, of course, you'd have to figure out how the oil and gas was going to be transported back to land. So, this was sort of the predecessor of our environmental impact assessment.

How does the present environmental impact assessment differ from the agreement that we used to have? I think that the EIA is different from the old process of agreement because it is compiled by people who are independent specialists who can give their opinion independent of any commercial interests or any agency interests. That's what I think is so valuable about the EIA's that we are doing now.

I would like to point out that this practice of carrying EIA's for offshore drilling for oil and gas in our country is based on international decisions. In 1977, the U.N. Program for the Environment and the U.N. made a decision to work out principles of regulating mining activity for offshore drilling of oil and gas. What they were talking about was what is called in English, "Offshore mining and drilling."

For several years, a working group met to draft these principles. I was a member of that working group for a number of years and helped work out these principles. As a result, we have tried to take these principles and ideas, and put them into practice in the Soviet Union. I'd also like to point out that, at the present time on an international level, a lot of interesting work is being done within the context of the European Economic Commission, which also has formed a working group to draft a framework convention for environmental assessment of potential trans-national impacts from any sort of economic activity on either side of a boundary.

This is a very important question because we're talking about the working out of general principles. The draft of this convention is almost ready and will soon be considered. In drafting this report, all the countries that are members of the European Economic Commission took part and the United States and Canada did as well. All these principles thus are well known to us, and we are making use of them in our practice in the Soviet Union.

Today in our country, there are several such serious legislative acts which involve EIA's. One of these acts I will tell you about. It's not a law, but it's a government resolution that has a lot of legal force because it comes from the Supreme Soviet. This is from the 26th of May 1987 on "Strengthening the Role of Impact Assessments on the Construction of Large Economic Projects, for the Purpose of Avoiding Negative Environmental Consequences." And this resolution has very detailed regulations about how to conduct an EIA.

There are also resolutions taken on the level of each separate Union Republic, particularly in the Russian Republic. The Russian Supreme Soviet has formed a special unit, a bureau, which is an interagency bureau that manages the carrying out of EIA's.

Of course, there are a lot of interesting questions here. In my first talk the other day, I already talked about how much we are disturbed by the great gap between what exists in the written law and what happens in practice. I know that you also have this problem that concerns you. We have to work out different procedures for regulating this problem and carrying out EIA's. We think that the procedures we have so far are not adequate.

I am a member of the government Expert Commission, the State's Plan of the Soviet Union. And I've been a member of a group that carried out EIA's of large projects, for instance, for oil and gas drilling in the northern part of the Tyumen District, and after taking part in this, I became convinced of how difficult it is to implement ecological environmental requirements, even when the government does allocate enough money for this. Imagine the following example: You've got supply and demand, but the supplier and the demander cannot make reasonable use of the money. For this Tyumen Project, 200 million rubles were allocated. The plan

called for using only 50 percent of this money. When the project started to be carried out, the builders only used 1,200,000 of the rubles which was a lot less than was allocated to them.

I know there are a lot of questions that are still unresolved with respect to protecting the environment, but I think that we can achieve pretty positive results, particularly if we continue, under a regime of openness, and we will try to involve the public more and more in this process.

QUESTIONS AND ANSWERS

Q Professor Kolbasov, I'd be very interested in your comment: we saw on our first day the new delimitation in the Bering Sea between the United States and the USSR. We share a field, the Navarin Basin, across that marine delimitation. Has the Soviet Union given consideration to unified field development of the Navarin Basin, and would the Soviet Union give consideration to a joint environmental impact statement and ecological controls on such a plan?

A Thank you for your question. However I must say that because of my position as a lawyer and the Deputy Director of the Institute of State and Law I do not have a complete picture of economic development that is taking place in the Soviet Union. I don't have direct experience, but I just have heard about possible joint exploratory work carried out in the Bering Sea, and joint development. Of course, I can't speak on behalf of the Soviet Union on how the decision will be arrived at, but in general, as much as I know about this area, I would say that, yes, the Soviet Union will agree and will be glad to do some joint environmental assessments in the area if we use ecologically-correct methods in our approach to the development of this basin. I should also point out that I am in favor of a framework convention, between our two countries, on the Bering Sea, which would reflect all these ideas of principle that should be more explicitly spelled out in this sort of convention or protocol. So I think that, yes, to do a joint EIA, that's something that we could do, but unfortunately, we do not have anyone on our delegation that is from the Ministry of Gas and Oil who would be able to give a more definite response to your question.

Q Ms. Kallaur, would you explain to us the negotiations that are going on between conservationists, the State, and Minerals Management Service over offshore oil drilling?

A Currently there is a Pacific Northwest Task Force that is composed of representatives from the states of Oregon and Washington as well as representatives of the Secretary of the Interior and two Indian Commissions in

that area. There have been discussions about plans for a sale in Washington-Oregon, which was included in the existing five-year program for the middle of 1992. There has been a resolution that is before the Secretary of the Interior right now that advocates that plans for a sale be put off for a period of seven years and that a suite of environmental studies be conducted before an environmental impact statement is prepared. The Secretary has not yet taken any action on that resolution.

Q As I understand it the real issue has been that there really isn't enough knowledge down there to conduct oil exploration because the science isn't in place right now and that the agreement that is before the Secretary of the Interior right now essentially acknowledges that point. A point that we have been trying to make here in Alaska is that there is a great deal more knowledge about the ecological and oceanographic processes in Oregon and Washington that there is the Bering Sea and in Alaska. It seems to us that we should have exactly the same process occurring here.

A I think that that is something that we are going to be looking at in putting together the next five-year program and we have spent -- perhaps there is someone in the audience you could speak to in terms of the exact amount of money we've spent on the Bering Sea -- I've heard one figure of \$65 million just on studying the living resources, and I know that's not the only amount of money that's been allocated to the Bering Sea. So I'm not in a position to agree with you that Washington-Oregon is the equivalent to this area. But we are very interested in making sure that we have a sound data base before we make any types of decisions. I think people who are familiar with the studies program realize that our studies don't stop once we have a lease sale, but that they continue through the exploration phases and in the event that there is development they continue at that point as well. On a nation-wide basis we've spent over half a billion dollars studying the marine environment and we are one of the major funders of environmental research in the federal government.

ERIC SMITH

Attorney

Representing Environmental and Native Interests

To give you some background into my perspective on this issue, I have been working on Alaska OCS issues for about 8 or 9 years now and have participated both in litigation in the Bering Sea, involving the St. George Basin of Bristol Bay and some consultation about the Navarin and Norton Basins. I was one of the participants in the Institute for Resource Management, or IRM process. So, I kind of have a perspective on this business, both from efforts to mediate it and being forced to litigate it.

In doing this, I've represented environmental groups, Alaska Native groups, Alaska Native villages, and commercial fishing organizations. So, the perspective is basically one of people and the organizations concerned about what oil and gas development will do the Bering Sea.

What I come away with in reviewing and participating in all this, is perhaps different from the attitude or the orientation that was presented to you earlier, and I guess that's why I'm here. Basically, as far as the groups I work with are concerned, the United States Federal Government is mission-oriented in its approach to oil and gas development in this country, which is a bureaucratic way of saying that it's purpose is to promote as much oil and gas development as possible.

That process was accelerated when President Reagan became President, and MMS went from focusing its lease sales from specific areas to entire areas; millions and millions of acres which made it much more difficult for anybody to react to what they wanted to do.

As far as I know, and I've checked this with some of the national groups, the MMS has never not held a sale because it felt that it would not be environmentally safe. Every single OCS lease sale that they've proposed they've held. I've also learned that the North Carolina AG's office reviewed the applications for exploration permits. Of the more than 6,000 exploration permit applications which have filed, the MMS has never turned one down.

I think that this mission orientation is reinforced in part by the way the OCSLA (the American law which governs oil and gas development) is written, which is pretty much a perceived mandate to drill. In part, it's the way the law has evolved. Now, I've been on the losing end of a number of these cases, and my orientation here will not be to criticize the cases, but my assumption will be that the United States courts have correctly interpreted the law. What I want to do is focus perhaps on whether the law, as correctly interpreted, makes any sense. In my personal opinion, and that of many of the groups I've worked with, it makes no sense at all.

The way the law has been interpreted was summarized I think unintentionally by two of the previous speakers. Mr. Cohen said that one of the courts had said that if agencies have gaps in information they can deal with it later. In fact, the law has gone far beyond that. In the recent litigation over the Bristol Bay case, the plaintiffs, which were the State of Alaska and a wide variety of fishing, Native, and environmental groups, hired a man who used to work for MMS, and he reviewed the oil spill contingency plan that they used in Bristol Bay.

Without getting into the details, what he found was a very simple arithmetic error that they had made in their plan. It was, we were told, on the order of $2 + 2 = 5$. We presented that error to the court, and we presented it with supporting affidavits and all that kind of thing. The interesting thing was that the federal government never denied that they'd made this error. They kind of hinted at it, but they never came right out and said, "This is why we did not say 2 and 2 are five." They kind of went into a long thing about: the difference between what they called "our preferred analysis", and what they came up with was not all that great: they could deal with it later.

Now, what the court said essentially, in an opinion that was quite remarkable in my opinion, was, "That's right." Any mistake that the federal government might have made at the lease sale stage can be corrected at the exploration or production stage. I think that's a fascinating result, and it has sort of culminated an entire line of cases which have permitted the federal government -- if you remember the check-list metaphor that I mentioned yesterday, where the law seems to require the

government to check a bunch of things off, and having done so, they can do what they want -- to do whatever it wants. In this case it almost seemed like the courts were saying, "If you can't check one off, don't worry about it. You can check it off later."

Where the law stands right now is that the coastal zone management process, which is where local people presumably and the State presumably have their best opportunities to participate, does not apply at the lease sale stage. The courts have ruled that coastal zone management only needs to be considered at specific planning stages for specific leases.

The courts have also ruled regarding any impacts on endangered whales that while the Minerals Management Service has to look at them, they don't actually have to adopt stipulations to deal with them or to follow the recommendations of the agency with expertise until the exploration or production stages. The federal courts have ruled that Native concerns about subsistence embodied in another federal law are not even relevant to the OCS.

Now, let's assume those decisions are correct. Where does it leave us? Essentially where it leaves us, in my opinion, is that the agencies are pretty much not required to do much at the lease sale stage anymore. In fact, some of the arguments that were made in court, the Bristol Bay case, almost suggested they didn't have to write any EIS at the lease sale stage anymore because, they said, "Nothing happens at the lease sale stage." They said, "We don't actually affect the environment at the lease sale stage."

Well, I think that brings in the second interesting comment that was made earlier by Professor Kolbasov, where he said, "There's a gap between the written law and practice." In reality, lease sale stages are probably the most important stage of this entire process, because the lease sale stage is really the only stage where the government has an opportunity, and I would argue "should have a duty" to evaluate the entire meaning of the lease sale. It's the only stage where they are not bound by the rather stringent requirements pertaining to suspension or cancellation of leases. And they can, just as a matter of discretion, decide that a certain area ought not to be leased.

You take Bristol Bay, for example. It was mentioned that 83 percent of Bristol Bay was not offered for lease. That was due to lack of industry interest. That was revealed in correspondence in the litigation there.

When we tried to argue that the Minerals Management Service should delete areas near some extremely sensitive bird habitat along the Alaska Peninsula, the answer we got was, "Very little environmental benefit; much too much oil may be there for us to not lease this area." I think that basically what they were saying again was, "We'll deal with it later, if we have to deal with it at all."

The other element of this whole OCS process that is troubling from the perspective of the groups I've worked with is citizen participation. I spoke a little bit about this yesterday, and I want to put it a specific OCS context this morning. The IRM process was, for me, a very interesting and educational process. I had never sat down and talked with the oil industry, who were my opponents, I guess you should say. I spent a great deal of time with these people. These negotiation sessions went on for several days. We had breakfast together, lunch together, dinner together.

What came out of the process was very revealing. First of all, it was real clear that major segments of the Bering Sea, which the Minerals Management Service had identified as perhaps open for leasing, were of zero interest to the oil industry. What we all were required to do was to identify those areas (each side) that were of interest to us, that were of great importance to us; and that are of no interest to us. Vast chunks of the Bering Sea got written right out of consideration for oil and gas development when we first compared the maps, the industry map of what they wanted, and the environmentalist map of what they wanted.

We then had a rather difficult negotiation about that remaining 10 percent. As was mentioned, a deal was struck. I think it was a deal that was sort of a perfect compromise. Nobody was happy with it, but everybody could live with it. When it was presented to the Minerals Management Service, it initially received

virtually no consideration at all. The perception that we had was that it wasn't going to go anywhere, and we had just wasted an entire 1-1/2 years of effort.

Eventually, some pieces of it got incorporated, but again from my perspective, I had a lot of trouble figuring why, if the oil industry said they weren't particularly interested in certain areas being offered for lease, the service insisted on putting them in anyway, and why, if the industry said they were willing to forego certain biologically important areas like around the Pribilof Islands, the service insisted on identifying them for further study.

I guess that's where citizen participation ends up in this whole business. The citizens offer information. The information is "considered" and then if it's not appropriate to what they want it to do in the first place, from our perspective (not ignored), it gets responded to.

I guess that kind of ends up creating some cynicism perhaps about citizen participation, because what has happened is that the State of Alaska will come in and say, "There's not enough fisheries information for the Bristol Bay lease sale." So, the Minerals Management Service did a rather lengthy study, lengthy in terms of the number of pages, and said, "Okay, here's all the information we have. We think it's enough." Well, that was it for the State of Alaska. They had identified their concern. The federal government persuaded the courts that the State's comments were due no greater deference than those of an individual citizen, so that any special participation the State had at the lease sale stage was written -- I wouldn't say written out of the law, but the law was interpreted in ways to make that special participation fairly meaningless.

In all the comments that we sent in, again they were responded to, but from the standpoint of an attorney which is obviously where I'm coming from, essentially what we were doing was helping the Minerals Management Service to build a better record. I guess what in the end happens is that comments are submitted, but all the comments do really is facilitate a decision that we think they made before they even went through the public process.

I realize this sounds cynical, but in real terms with respect to Bristol Bay; with respect to the experience we had in St. George Basin, that's what happened. There was a determined effort to get the Minerals Management Service to adopt some meaningful stipulations. The stipulations that were adopted primarily were requirements that areas be studied, and then in the discretion of the regional manager of the Minerals Management Service, additional stipulations might or might not be adopted later on.

There were no special immediate protections of biological resources. There were no stipulations at all about endangered species. There was an advisory statement that they might or might not impose seasonal drilling restrictions to protect migrating whales. We were totally unsuccessful, and in fact the agency, with expertise in this area, the National Marine Fisheries Service, was totally unsuccessful in persuading the Minerals Management Service to disallow activities during certain key periods when the whales were present.

So again, the attitude was, "If it comes up, we'll deal with it later." And I submit to you that that's how the *Exxon Valdez* crashed. It was because agencies, over time, were lulled into thinking that if something came up, they could deal with it later, and now they're trying to deal with it.

So, what can be done about all this from the perspective of the groups that I've worked with? I guess there are two main things I'd like to suggest. Number 1 would be some changes to the American laws. I'm hopeful the Soviet people here will understand my perspective in this when they're evaluating how they're going to develop their own OCS, because I think frankly the Americans have made some very big mistakes, and our law needs to be changed to ameliorate those mistakes, or something equally catastrophic, I think, will happen in the Bering Sea.

The four things I think that would really help the Outer Continental Shelf Lands Act are: 1) to make the entire process a more balanced one, and to reduce this perception that there's a mandate to drill in the statute; 2) there's no process in the OCSLA whereby certain areas in the OCS can be set aside permanently from all activity -- for example, Bristol Bay would be a wonderful place to set aside permanently from all activity; good sized buffer zones around Unimak Pass and the

Pribilof Islands would be other good examples, I think -- but there's no process in the statute for that; 3) the law needs to be amended so that statutes like the Coastal Zone Management Act, the Marine Mammal Protection Act, and the Endangered Species Act have a meaningful presence at the lease sale stage.

The State should be allowed to do consistency reviews of OCS lease sales. Stipulations should be required to be adopted at the lease sale stage rather than at the later exploration or production stages when they have lost the sort of system-wide ability to look at things. Specific standards need to be set. It's interesting -- to do the five year plan, there's a whole host of substantive things that the Secretary must consider and conclude. There are no such requirements for the lease sale. So, those ought to be incorporated in the law. And finally there has to be a way that the citizens of the affected area and the State can have a meaningful role in this process. As I said before, at the lease sale stage, there's no consistency review, which is where the State has an opportunity to really make an impact, because they can block it all together until the consistency situation is resolved and citizen input is by and large ignored.

The suggestions I would make are: 1) to make Coastal Zone Management apply; 2) to make Section 19 of the OCSLA, which allows the Governor to comment on plans, basically to require the Secretary to adopt those recommendations unless he has a very good reason not to; 3) to apply a similar standard to some kind of advisory group like that that was set up in the IRM process where you would have affected interests -- fishing, Native, oil, environmental -- form an advisory panel. If that advisory panel made recommendations, that those recommendations be binding on the Secretary -- again, unless he has a very good reason to turn them down. What I think this would do is it would provide meaningful opportunities to participate and maybe lessen to some extent the mission orientation of the agency. Finally, in an international context, I'd like to support very heavily what Professor Kolbasov said about a framework convention and joint analysis of impacts.

The species that are affected by oil and gas development in the Bering Sea are common to both our countries, and they're of equal importance to both our countries. He mentioned something about ecologically correct methods for analysis of the developments in the Bering Sea. I think that's a great idea. I think that,

in the framework of this convention, that that sort of thing ought to be pursued so that the United States government and the Soviet government have a sense of the real international ramifications of what's going on, and some way to sort of make sure that what gets done in the Bering Sea is done intelligently.

I guess to summarize again, my participation in the oil and gas process in this country has led me to believe that the law, as interpreted, basically enables the agencies to take a "we'll deal with it later" attitude. We attempted to persuade the courts that that was bad law, and the court said we were wrong. I can accept that, but I can't accept that it's good policy. I think it's very bad policy. I think it's very short-sighted policy. And I think it's going to come back to hurt everybody.

SVETLANA KRAYCHENKO

Lvov University

I represent the University of the Ukraine. I have been teaching at the University of Lvov for a long time, so I think I can give you some information that will be of interest to you. I think it will be interesting for you because, although we live very far away from the sea, the Ukraine nevertheless is very rich in natural resources, in minerals, oils and gas, and they are located mainly in our area. We have various problems with respect to protecting the environment that have arisen because of developing these natural resources.

First of all, I'd like to address a few general issues about environmental protection during oil and gas mining and drilling. These issues are regulated by legislation on a union level and a republic level which establish the procedures for allocating land that will be developed. A number of governmental bodies are engaged in this. The Council of Ministers of each republic and the local parliaments have a say in this, depending on the size of the leasing grounds.

Where the mining takes place, the State Committee on Mining Supervision has authority here. The legislation regulates the harmful effects of mining activity on the environment, and the legislation that was adopted in 1990 on a federal level about land use is our guiding principle here, our guidelines. I think that since Alaska also has agriculture, you probably have a problem as well in allocating agricultural lands for mining activity. Our legislation gives priority to land use for agricultural purposes over any other kind of use. For this reason, when a piece of land is given over to mining concerns, then the law provides that compensation be given for the loss to the land users, and also for the loss of the agricultural products that are received from this land and that would be sold to the State.

In addition to this, there is a very important clause in this legislation that is aimed at protecting the environment during mining activities, and that is the obligation of mining interests to recultivate the land; to put it back into something close to its natural state at the end of the mining activities.

Although the government gives money to restore the natural environment after mining activities, these monies are not always used for that purpose, at least not to their full extent. In addition, mining activity affects the soil, the atmosphere, the water, the forests, and other vegetation around the site. Therefore, the legislation, which regulates the use of these natural resources also comes into effect here.

Air protection laws in the Soviet Union on a federal level and on a republic level provide for prohibiting harmful consequences for the air as a result of mining activity. It's necessary to take measures to prevent harmful effects at the construction stage and at the development stage of mining activities.

Sometimes the equipment used in mining activity has a harmful effect on the environment. I can also say that, in our area (in our region) which is so rich in mineral resources, this problem of cultivating the soil is very difficult. We have a practice in effect of not allocating new lands for mining activities unless the work to restore the soil has been carried out first. In addition, drilling activities destroy the scenery. I have to say that we have a very beautiful area.

The problem is that the oil and gas deposits are very near mineral waters that have curative properties and are used for something completely different. For instance, one of the most valuable sources of curative waters in our region is called a name that is a play on words because these waters were discovered during development of layers of oil. Since these waters are used for medicinal purposes, the oil and gas development near by has a very harmful effect on them.

Our region also is home to other sites of ecological importance: the Carpathian National Park is there as well as the Carpathian Reserve. These are valuable natural sites and the legal regime in effect, particularly in the Carpathian Reserve requires very strict observance of any kind of development activity on its territory. I should also note that our region, after the Soviet President Gorbachev visited it last year, was officially designated as a recreation zone. This determines the purpose it will be used for.

So, there's a conflict of interest between economic and environmental interests. It's clear that mineral, gas, and oil exploration does not go together very

well with recreation, when we're talking about environmental treasures of the region.

A large role here is played by the fact that the economic advantages of recreation use of land has not yet been realized by us. We have not yet taken any steps to determine the economic advantages and benefits to be gained from using the land for recreational purposes.

At the present time, these attempts are now being undertaken in our region by the Institute of Economics. Their work shows that there is economic benefit to be gained from using our area for recreational purposes. But of course, this will require an end to the activity of the most harmful mining concerns. It will have to change the equipment they use so as to end the harm that they are causing to the environment. We have made a certain amount of progress here, which I think is related to the growth of the process of democratization in our country as well as the growing self-awareness of our country.

I think that most of the enterprises in our region are federally owned and operated. Up to 90 percent of their production in our region is transferred out of our region to other areas, whereas the pollution stays right in our area. So, right now, social and public organizations, have just been formed recently -- there's a republic level association called Green Peace. There are social organizations that are very active now in the environmental field with respect to designing construction and implementation of mining activities, with respect to their impact on the environment.

Earlier, our legislation called for mining enterprises and other activities that were harmful to the environment to be carried out without any account given to public opinion, and without taking into account the local authorities. Now, this situation has changed and it has become possible to have an influence on the processes. As an example, I could tell you about the activity of trying to avoid an increase in the harmful effects of a coal mining establishment. We gave them seven warnings. This factory uses waste material generated by the oil industry, and because it's an old factory, a lot of their equipment is obsolete. This was a joint Soviet-Bulgarian project. After we did an environmental impact assessment with the

participation of the State Committee on Environmental Protection as well as local authorities and scientific people, we found out that it was neither environmentally nor economically justified. So, the project did not take place.

In conclusion, I would like to quote the fact that nature does not know mistakes: it is always right; it is always wise; it is always strong. Mistakes and illusions come only from people. I hope that our cooperation, between the USSR and the United States will allow us to wisely use our natural resources without making mistakes that future generations will find it hard to forgive us.

MARK WORCESTER

*Assistant Attorney General
Civil Division*

The theme that I'd like to explore a little bit this morning is the challenge of balancing federal and state issues in energy resource management in the offshore. Although this conference is specifically relating to the Bering Sea, my comments will be more general and analytical.

I think it is especially pertinent to talk about this kind of issue with our Soviet guests here, in light of their developments with *glasnost*, *perestroika*, and more recently, pressures from some of their Soviet Republics for increased autonomy and influence in national affairs.

In the United States, we have a long history of federalism, and with trying to balance and reach some sort of accommodation between state and federal authorities in decision making. It is in that context that I will address resource development in the offshore area.

One of the reasons you'd want to involve the states is that the interests of the national government are often somewhat different than the local government. The national government has concerns with the national energy supply, the national economy, the national balance of payments, and defense. Whereas, the State has responsibility to its citizens to insure a healthy economy locally, sufficient state revenues. Especially in a frontier like Alaska which is changing very rapidly, we have social and cultural changes that we must cope with, fishery resources to protect, and of course, the recognition that if there is an environmental impact such as we suffered with the *Exxon Valdez*, that many of the impacts were suffered locally. Obviously the State has a concern about the federal decision-making in its area.

At the outset, I would like to say that the State of Alaska has and still does support environmentally sound resource development. It does so on its land; it also has supported it on federal land. It doesn't mean that we always agree with the

federal government's decisions, but the State does generally support that kind of use in that kind of direction.

The general areas of federal/state issues that I would like to talk about -- I sort of break down into several categories. One is a very fundamental issue of boundaries. Boundaries are important because they determine primary responsibility -- who has control over the disposition of revenues. Second, I'll talk a little bit about money issues, because they're always very relevant in governmental disputes. Third, regulatory jurisdiction; fourth, the opportunity for input; and fifth, the opportunities for cooperation.

International boundaries are established in different ways than the state boundaries: by history, by sale in the case of Alaska; for the United States, by treaty, and unfortunately sometimes by war. Within the federal union, because we are a federal union, the ultimate authority is determined by the central government. Boundary is still a live issue in Alaska between the State and the federal government.

Congress, about forty years ago, decided that the states may have primary jurisdiction ownership the first three miles offshore. That did not solve the issue. We still had to decide what the shoreline is. We had a dispute that's now 11 years old over a very valuable piece of real estate up in the Beaufort Sea, where more than one billion dollars of lease revenues are at stake. It still has not been resolved and is working its way through the courts.

The reason I mention this is that I think it has some potential ramifications on the international boundary too. Here it was decided that there were sufficient policy reasons to go ahead with the lease sale, that despite the dispute concerning the boundary, that the State of Alaska and the United States agreed to lease that area. I don't know if anyone's given thought in the international arena to that kind of arrangement, but there is precedent in the State/Federal relationship for making that kind of situation work.

I talk about money partly because it, I think, is a very legitimate concern. State and local concerns sometimes deal with how to respond to the changes and

the challenges posed by resource development. If there are new people moving into an area, you need money for schools, for roads, for harbor development. There are going to be social and cultural changes that take place, and of course, there are environmental risks that the State and local communities want to be prepared to handle. So, it's important to have a source of revenues to deal with all these challenges.

Onshore of Alaska, when federal lands are leased for oil and gas development, the State generally receives 90 percent of federal bonus revenue and rental incomes. In some areas, it's only 50 percent. In the first three miles of the federal land offshore, the State only receives 27 percent of the revenues, and it receives nothing for oil and gas development further than three miles offshore from the State's boundary.

The State consistently has advocated a larger revenue sharing role, not just because it might lessen resistance to oil and gas leasing, but more importantly because it would give the State the opportunity to respond to the very realistic costs and challenges that are posed by offshore development.

Now, I'll turn to regulatory jurisdiction. The federal government, because it is a central government and its law is supreme, does exercise, in many ways, regulatory jurisdiction over state land, including the State offshore waters in the first three miles. The converse is not true. Forty years ago, Congress made it clear that the states were not to have ultimate say in OCS, that that is a federal responsibility.

Carolita talked in terms of a strong voice of the State in oil and gas offshore leasing. Eric talked as if it were a weak voice. But there are two areas where the State has sort of special room for comment in exercise of authority that I'll mention separately. One has to do with the lease sale stage. The governor has the opportunity to make recommendations concerning the size, timing and location of offshore oil and gas lease sales. The Governor's recommendation must be accepted by the Secretary, unless the Secretary decides that the Governor's recommendation fails to strike a reasonable balance between the national interest and the well-being of the state citizens.

As we found out in the Bristol Bay case which the State challenged and made a recommendation against that sale, the courts have pretty much said the last word on whether or not a reasonable balance has been struck in the recommendation of the Governor is the Secretary's. The boundary issue in this case really determines who has the final say so. The State's recommendation power is there, but it is not the last word.

The second area where there are special powers in the Coastal Zone Management Act, which has been referenced by several people at the exploration and production stage. And again, if the state and local authorities find that a project is inconsistent, the Secretary of Commerce has the final say so. So again, it's a federal decision ultimately, whether or not a project may go ahead. So, basically the State recognizes that we're working in an environment where the federal government, through its ownership and it having the opportunity to exercise the supreme law, has the final say so in the federal OCS.

My point is not to harp upon this point because someone has to have the final say so in any system, but to point out that the State's recourse is largely through the opportunities for comment, and there are many provisions for comment that are provided for in federal laws.

Current law gives the states local comment authorities beyond the two I've just mentioned: throughout the lease planning process, exploratory drilling process, the production and development process, and in establishing research priorities. The State generally feels that it has good opportunity. It recognizes that some of its recommendations are not followed, not only in Bristol Bay. We had recommendations concerning drilling restrictions during certain seasons because of whale passage and subsistence take which have not been accepted recently. But generally, the State does have frequent opportunities for having its voice heard.

Before I leave, I guess that one thing in the federal system that sometimes gets overlooked is the political process. It's not set forth in the law, but obviously through congressional delegates and through public opinion pressure, there is the opportunity through those means to affect federal policy that's outside strict

provisions in the statute. That has been, even though Eric says no oil and gas lease sales have been stopped, there's certainly many that are on hold throughout the country, based largely upon that kind of political pressure from local communities. In Alaska, I am sure when the State feels it has an opportunity and feels strongly about it, it will use that kind of influence through its congressional delegation and so forth.

I also want to talk a little bit about cooperative agreements, because I think this is something that has been a favorable aspect of federal/state relations, and also because it is an example of the kind of thing that the United States and the Soviet Union may wish to consider on a case by case basis.

I previously mentioned essentially a cooperative agreement to lease disputed lands. The other example I'd like to give is for unitized field development, which was a subject that was brought up by a gentleman in a question previously. Oil and gas deposits, like fish, do not recognize state, federal or international boundaries. So, when there is a field that underlies two jurisdictions, there are many reasons why there should be an organized comprehensive plan for developing the resource. They have to do with reducing environmental risk, to efficiency, and to avoiding waste of the oil and gas resource.

Alaska and the United States government have worked well together in trying to avoid those kinds of inefficiencies and risks and wastes, and just last year, entered into the first cooperative joint unit agreement with various lessees in an area offshore the North Slope of Alaska. It is not one that has gone into production or likely to go into production in the next couple years, but the mechanism now is in place for that joint development.

In conclusion, I'd like to say that Alaska like any entity doesn't feel that it gets enough land, money, or control. But we nonetheless appreciate the fact that the process that is in the statute does allow for opportunities for us to voice our concerns and have them considered by the federal government before it makes its decisions.

QUESTIONS AND ANSWERS

- Q** I've got a question for Mr. Cohen. You mentioned that the Department of Interior has the authority to suspend leasing because of environmental concerns and that they also have the authority to buy back leases. I was wondering if you could elaborate on that and the conditions which would have to be satisfied to actually result with buying back a lease?
- A** To my knowledge, the Department of the Interior has never bought back leases.

Carolita, is that correct? But they have suspended leases. The courts make a distinction between -- you can't suspend forever, otherwise it would constitute a Fifth Amendment taking of property. But for environmental reasons -- for example, after the Santa Barbara blowout, the Department of the Interior suspended, I believe it was all exploration and development in the Santa Barbara Channel for, I'm guessing now, several years; a very long period of time. The oil companies were pressing and saying, "Well, this is starting to constitute the Fifth Amendment taking." But they did suspend and they put into play a variety of requirements on the companies in terms of future development there, to be sure that you wouldn't have the situation repeated. So, they have in fact used suspension power. They do have the authority; the OCS Land Act amendments lay it out. They do have the authority though to buy back. There may be some other examples Carolita could talk to.

BY MS. KALLAUR:

I think you probably would like to have some more information on the conditions under which we could actually buy back a lease. Bill, I don't know if you want to address it. I'm not a lawyer, but the way I understand it, you would have to have an instance where an exploration or development plan would be submitted. And that the Interior Department would make a judgment that, if that exploration plan were carried out, it could not be done in an environmentally sound manner, and that there were no alternative ways to correct the deficiencies in the plan.

Then, I believe there's a waiting period of five years; I believe that's intended to give the operator an opportunity to correct those deficiencies. And at the end of that five year period, then if the operator were unable to correct the deficiencies, we would then be able to cancel the lease. I'm assuming there would have to be some sort of compensation paid. We have never encountered that situation since the Lands Act amendments were passed in 1978. I think it's Section 5.

BY ERIC SMITH:

I don't remember the exact standards, but it has something to do with a significant threat to the environment. The way I interpret it, it's not just a balancing like they do at the lease sale stage. They have to find something perceptible, significant, and immediate that leads them to believe that lease operations would create a danger right now. Nobody has really figured out how the standards work in practice, as far as I know. But my feeling is that the Interior Department could not, for example, say, "Well, we've balanced the risks and we think there's a threat to the whales here, so we're going to suspend the lease." I think the oil companies would argue that there would have to be some demonstrable danger above and beyond the data they looked at at the lease sale stage to allow them to suspend a lease then. An example, I would guess, might be if there was a threat of a blow-out, and they found some information that the well might blow-out right when the whales go by; that they could say, "Hey, wait a minute, we're gonna suspend operations because we know something's gonna happen."

But it's a much tougher standard to meet, and probably rightly so. At the lease sale stage, there's no property right involved. The oil companies don't have any kind of financial commitment that they can point to, and nobody's really made any promises to anybody. Once the lease is issued, they have a property right in that area. And the federal government, under the Constitution can't take that property away without paying them compensations. So, under those circumstances, I think, rightfully so, it's harder for the federal government to stop the operations once they get the lease.

And that, frankly, is why we have called for much greater consideration at the lease sale stage, because it is so much harder later on to reverse both the financial and the institutional momentum once that property right has been vested in the companies.

- Q A question for Carolita again. Mr. Cohen was talking about the science and EIS's and how there's a lot of science in there. It's true there is a lot of results of scientific studies mentioned in the EIS's. However, one of the major criticisms coming from the scientific community about the way that the MMS does its research and does its EIS's is that the Minerals Management Service relies very heavily on gray literature. Essentially, probably, the biggest problem with gray literature is that it is not subject to peer review. There are no scientific panels placed to review the methodology and the systemology that will be used in doing the research, and very often if you have a bad "in", if you have a bad structure, the answers you're going to get out either aren't very helpful or they're not as good as they could be. The same can be said for the final product. I know, for example, the Eskimo Whaling Commission and the Alaska Department of Fish and Game have very vigorous peer view processes.

Everything that I've said and it was said in much more detail in the pamphlet by the Arctic Research Commission recently and presented to the MMS. I wondered what you were going to do in response to that, and what thinking was going on about improving the way that science is conducted by the MMS?

- A I have heard, in the past, comments regarding gray literature. And I know that we have a number of review boards that we have established to look at our environmental studies. We have a scientific committee in place, as well as we have specific review boards that look at particular studies and give us their independent advice as to whether or not the studies are well designed and also are being properly carried out.

- Q Essentially, I am passing on what I have heard from other scientists, and that is, one of the major criticisms that they have of a lot -- I'm not saying all of

it. I know that some of it -- there is some review that goes into it, but a lot of it, I am told, there is not.

A Thank you.

Q However, the Coastal Resource Service Area Board has been concerned very much about oil development in Norton Sound, the Bering area. One of the concerns they have is on -- if there is development, and all the permits are given and a field is developed, and if there is accident for an oil spill, how would the subsistence -- people who depend on subsistence be assisted? I know it's kind of looking into the future and having an example of Exxon. Then, what does government do? Has the Bureau of Indian Affairs and the Department of Interior considered perhaps a value being charged, where you'd have a system so that if there is a significant spill that does damage the environment, that has impact on living resources in the Bering area, that people who depend on these resources would be assisted in living and meeting their basic life needs?

A We really haven't looked that far into the future. I know one thing we do when we put together a five year leasing program. We have a requirement that we have to look at those types, and making a decision whether or not it's correct to go forward with even putting a lease sale on the schedule. I know that we're watching, very closely, what's being done in the case of the *Exxon Valdez* spill, because I think that our understanding of what the true causes of the spill are is really increasing because of that spill, and also not only the quantitative values, some of the qualitative values, because it has effects on people's lifestyle. We're going to be incorporating that type of information in our decision on the development of the next five year program.

We haven't gotten to the point where we have figured out -- I believe what you're asking for is really a compensation mechanism so that people who were affected the bill would be able to be compensated for these costs. I would think, under our current system, a lot of that would have to happen between the operator, whoever was the person who was in charge of the operation; who was responsible for the accident would have an obligation to compensate the Native people for whatever losses they incurred.

I think one reason why we have this decision-making process, it's really very hard to predict into the future. If we were ever to have additional drilling in the Norton Basin and a commercial discovery were made, we would do a full-blown environmental impact statement before we made a decision to go forward, and we would be working very closely with the State and with the local entity through the Coastal Zone Management process, and we would be trying to address the concerns that the people had, at that time, and make sure that we have things in place before the development was allowed to proceed.

Q One of the the things that really worries our Board and the people living there is that you have a tangible example of Exxon, where the State and federal government had a planning process, and now you can see the claims that are coming forth from various groups; fishermen and those impacted. There's going to be fights over value. But what I'm concerned about is the people that depend on the resource, having an immediate need to be taken care of for food.

A I think that's a very legitimate concern, and I think it's something that the whole federal government is going to have to look at in terms of how the CERCLA regulations have actually operated; whether or not there are any changes in the law that should be made to make sure that compensation is paid to people who are harmed, immediately.

My husband is a small businessman, and I can appreciate the need for people to be compensated very quickly, because you can't continue long without certain resources.

Q To continue what was said by the previous speaker, people can sue for compensation, they can apply, they can win or lose in court, but nature can't do this. So, I have a question: Do you have some kind of applied environmental programs like the program in Norway? I will clarify that.

In Norway, they have a special environmental program. It has to do with offshore drilling for gas and oil. Now, we're interested in this, for our own purposes. We'd like to know if, in the United States, are there any kind of measures for any kind of programs for special sort of catastrophes affecting people and nature, or do you plan on doing it step by step as the situation arises?

A ... applied research program that deals with oil spill's containment and cleanup. Even following the *Exxon Valdez* spill, we undertook an effort with the American Petroleum Institute on a scale of \$6 million to try to pursue research in this area -- if that's the type of applied research you're asking me about.

Q No, that's not quite what I'm talking about. You are studying the results of the accident. The Norwegian program studies the possible effects on the ecosystem before the accident and looks at the branches of the environment that would be most damaged by this ahead of time, for example, polar bears or other elements of nature which are both indicators and primary sufferers in such a case. I understand that for both of us; our sides, this might be an interesting topic for discussion. I think we need to create such programs. We are behind Norway.

And secondly, another question: According to your legislation, can what happened in our country occur in your country? In other words, the development of gas fields in Yamal was done without environmental impact statements. It was financed on a subsidy basis as an exceptional case. Is something like that possible in your country?

A We do have an extensive environmental studies program that looks at the effects of oil and gas activities on such resources as polar bears, marine mammals -- and we, in fact, have a display in the front of the room that discusses this program. This is one, where I had mentioned earlier on a nationwide basis, we have spend over \$1/2 billion studying the marine environment. So, I'm sure that we have a great deal of research that would

be applicable to the Soviet Union, and we would be able to share that research with you. We take that responsibility very seriously.

In answer to your second question, if I understand it correctly, I don't believe we could have a situation as you were referring to.

LUNCHEON SESSION

INTRODUCTION OF CONSTANCE HARRIMAN BY DINAH BEAR

I'm very happy to have the opportunity this afternoon to introduce Constance Harriman, the Assistant Secretary of the Department of Interior for Fish, Wildlife, and Parks. There really could be no more appropriate official to be speaking to this conference than Miss Harriman, who has done a tremendous job in a short time of taking aggressive and positive roles for protecting our resources.

She did her undergraduate and graduate study at Stanford and obtained her Juris Doctorate at UCLA, worked briefly for the Department of Justice, and spent several years in the Department of Interior's Office of the Solicitor. She then spent several years in the private law firm of Steptoe and Johnson, and last year assumed the position of Assistant Secretary for Fish, Wildlife and Parks.

Among her other responsibilities as Assistant Secretary, she's a member of the Advisory Council on Historic Preservation and also the Great Lake's Fishery Commission. In fact, she mentioned to me this morning that she'll be testifying shortly regarding the subject of exotic species in the Great Lakes, which was the topic that was mentioned at the conference yesterday. She'll be talking about both the National Park Service and Fish & Wildlife Service's role domestically and in relationship with the Soviet Union, and also offer some thoughts about the proposed International Park.

CONSTANCE HARRIMAN

*Assistant Secretary of the Interior
For Fish, Wildlife and Parks*

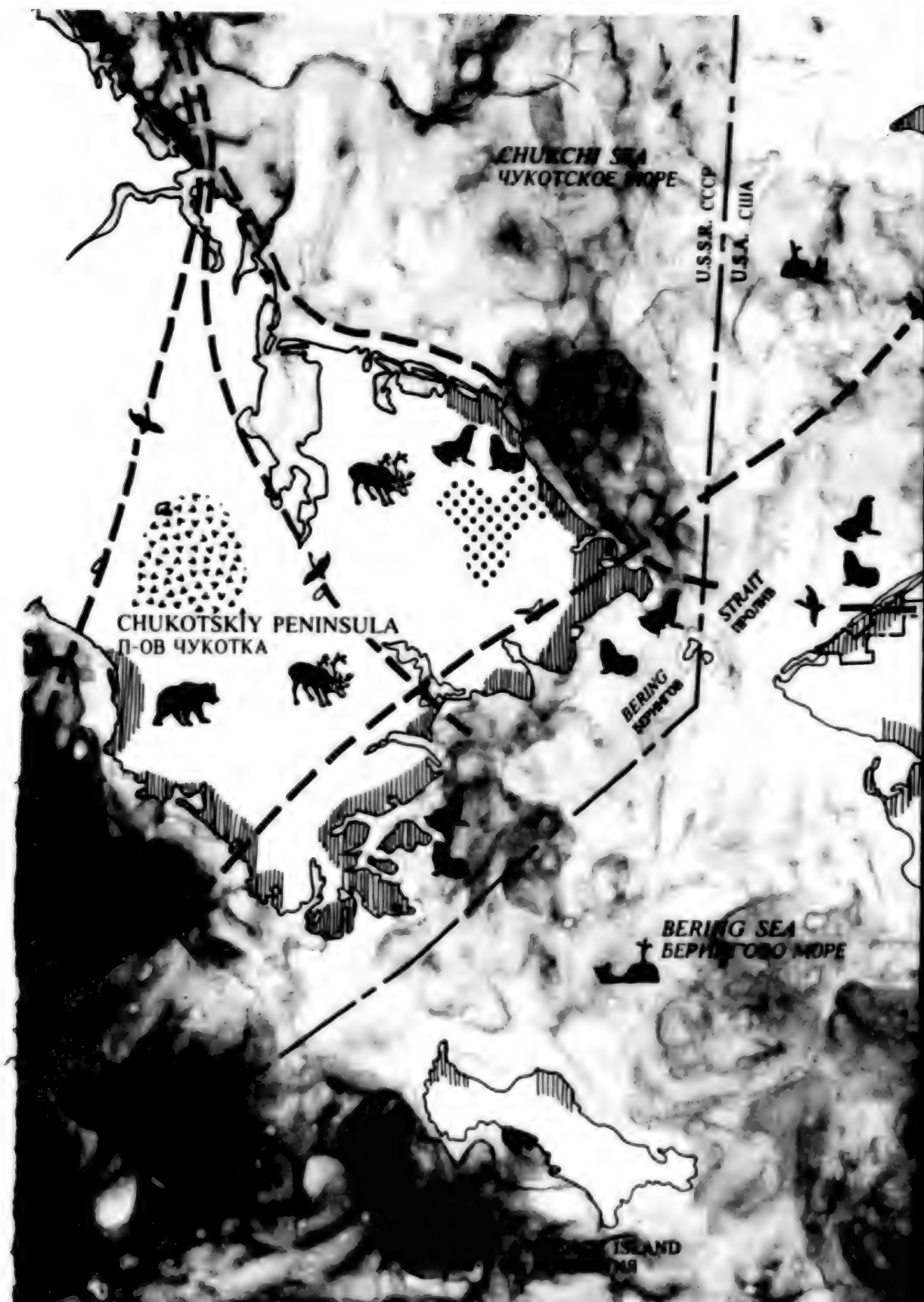
I want to extend a particularly warm welcome to our Soviet friends, and I send a hearty thank you to the Department of the Interior's co-sponsors: the Council on Environmental Quality, NOAA, the Center for Marine Conservation, and the State of Alaska.

Orchestrating a conference such as this one can be a very tedious process and it requires a great deal of commitment and patience. Both Dinah Bear and David Struhs, among others, have logged countless hours, patiently putting many, many scattered pieces into place. I want to extend my personal thanks to both of them.

Yesterday during an unplanned layover in the Seattle airport that lasted about four hours, I had occasion to read several articles about the Presidential Summit. One of the things that I was struck by is that several commentators observed that the Summit this week lacked the thrill and the suspense of earlier ones. Summits, in the past, were rare events and they were high risks. They occurred at a time of profound tension and conflict between our two countries. They occurred in a climate of unfamiliarity and suspicion.

U.S./Soviet meetings have become much more frequent and more familiar. Their outcome is dependent much less on the quality of contact between personalities. That we can meet almost on a routine basis without a crisis to justify that meeting is testimony to the solid progress that our two countries have made. We have set a course for cooperation.

Now we face the unglamorous but critically necessary task of working on what I call the "nuts and bolts". And what I mean by that is that we now have to flesh out the details behind the broad goals that we have enunciated, and behind the general principles that we have agreed upon, because it is the details that ultimately determine whether we accomplish anything.





With the easing of tensions between the Super Powers, people throughout the world increasingly share the view that it is environmental hazards that pose the greatest risks to us rather than political ones. And so, we today are called upon to bring our energies and our resources to bear to meet our most pressing environmental challenges.

You have been talking for several days now about Shared Living Resources in the Bering Sea, including fisheries, marine mammals, ocean dumping, and oil and gas development. This afternoon, you turn your attention to parks, refuges, and protected areas. As the Assistant Secretary of Interior who oversees America's 455 national wildlife refuges and 345 national parks, this afternoon's topics hold a special interest for me.

To provide you with some background on how the United States attempts to conserve and manage its protected areas, I will talk briefly about the responsibilities and activities of the two departments that I manage: the Fish and Wildlife Service and the National Park Service.

The Fish and Wildlife Service is the principal agency through which the United States government carries out its scientific wildlife management responsibilities; to conserve, protect, and enhance the nation's fish and wildlife and their habitat. The Fish and Wildlife Service has 7,000 employees, and they are located in approximately 700 offices throughout the United States. The Service is responsible for managing 90 million acres of land, 454 national wildlife refuges, and 70 national fish hatcheries. They also operate several research laboratories and work closely with several universities in the form of cooperative research units.

The primary activities of the Fish and Wildlife Service fall into six general categories. First, endangered species. Under the Endangered Species Act, the Fish and Wildlife Service is responsible for listing, consultation and recovery of both threatened and endangered species.

In the area of fisheries, the Service, as I said, operates 70 fish hatcheries. It also conserves and restores nationally significant fisheries and it assists Indian tribes in managing their fisheries.

The Service plays an extremely important role in the area of migratory birds. Under the Migratory Bird Treaty Act, the Service manages over 850 species of migratory birds. I mentioned refuges, and I said that the Service manages 454 refuges. The purpose for which most of these refuges were established is for migratory birds, though several were also established for endangered species. A new area of emphasis that I think is occurring in this new administration, is the potential that new management of these refuges have for the very important principle of biological diversity. It's an area that we're looking into, and I think needs quite a bit of attention.

In the area of wetlands, President Bush has announced his goal of no net loss of wetlands. The Fish and Wildlife Service is right in the vanguard in trying to implement that policy. The Fish and Wildlife Service has great expertise in protecting, restoring, and acquiring important wetlands areas in the United States.

Last, the Fish and Wildlife Service plays a very important role in the area of law enforcement. We have over 200 officers who are responsible for enforcing the wildlife laws of this country, such as bans on the importation of endangered species. That's the Fish and Wildlife Service in a nutshell.

The National Park Service has 18,000 employees. They are organized in 10 regions throughout the country. The Park Service is responsible for managing 80 million acres of land. There are a total of 354 park units in the United States. And something I want to emphasize, because this is something that people really don't understand, even in this country, and that is, there is a tremendous amount of diversity between these 354 park units. The average American tends to think that each one of these units is equivalent to Yosemite or the Grand Canyon or Yellowstone. In fact, that's not true. Yosemite, the Grand Canyon, and Yellowstone are among the ten national parks that we call the "crown jewels". They are show-case parks.

We have about 12 other categories of parks that we call park units, really. They include: preserves, national monuments, national memorials, historic sites, national military parks (the most obvious examples of national military parks are the

civil war battlefields -- we have about 12 of those). The park system also includes national sea shores and national recreation areas.

Last year, over 350 million people visited our parks. And I say that for a reason. The legislation that was passed in 1916 creating the national park systems sets up a very interesting tension. It says that the park service is supposed to, in managing the various park units, provide for visitor use and enjoyment. But the legislation also says that the park service is supposed to manage so as to conserve the resources within the park.

In a specific area such as Yosemite where we have heavy visitor use, it can create a real conflict. We try to strike a balance, and sometimes we do emphasize one over the other out of necessity. And the way I explain how we do that is, if we are talking about a crown jewel park such as Yosemite, greater weight is given to the conservation side, because those parks are considered to be similar to museums of the Great American Outdoors. If we're talking about a national recreation area, on the other hand, in that instance, we're more likely to give a greater emphasis to visitor use.

I'd like to mention two areas that I am stressing as the Assistant Secretary; two particular initiatives that I'm promoting this year and next year. The first one is an environmental education initiative, and this relates to the Fish and Wildlife Service. In a few of our national wildlife refuges, the most obvious example is the refuge in San Francisco Bay, there are what I consider to be model environmental education programs. I would like to see these programs duplicated throughout the refuge system in our country. And the way the program works in San Francisco -- and I think it's really a great success: everybody who knows anything about it really marvels at it -- is that Fish and Wildlife Service refuge staff work with school teachers who come to the refuge and they talk about the various things the teacher can discuss with his or her students. They arrive at some materials that can be used. And then the teacher brings his or her students to the refuge and they spend a day talking about the significant features, depending on what the refuge is. It may be endangered species; it may be wetlands; it may be important habitat.

Last year, the San Francisco Bay National Wildlife Refuge alone had 30,000 school children come to the refuge to learn about the environment, and unfortunately an equal number of 30,000 were turned away because the refuge simply could not accommodate them. Because it is so successful and because, I think, environmental education is so important, I and the Director of the Fish and Wildlife Service are putting a major emphasis on trying to duplicate this kind of program in other refuges in our country.

The second initiative that I'm promoting, that I wanted to talk about today, involves the National Park Service. This is a science initiative. At the present time, the Park Service honestly lacks necessary and sufficient information about its resources in the parks. Because of that, I am not confident that we are making the best management decisions. I think we need to do basic inventories to establish baseline data, and from this we can do monitoring and trends analysis.

A critical tool that we are using and will be using much more is the computerized geographical information system. We are planning to allocate substantially more funds to this on behalf of the science initiative.

The last topic that I'd like to touch on is the cooperative efforts between my two bureaus, the Fish and Wildlife Service and the Park Service, and their Soviet counterparts.

In 1990, the United States Fish and Wildlife Service will sponsor, just in 1990, nearly 50 exchanges of scientists with the USSR. Twenty of these will focus on the Bering Sea. These exchanges cover research and management activities on polar bears, walrus, sea birds, migratory waterfowl, satellite monitoring the animals, and comprehensive shipboard surveys of the Bering Sea ecosystem.

While our two countries have made great progress during the last five years on studies of Bering Sea species and ecosystems, I have to say that I think much remains to be accomplished. I'd like to touch on a few points, where I think we make some needed changes. I think we need, first of all, increased access for scientists from both countries to areas where shared species populations live or migrate.

We also need less restrictive travel regulations for scientists from both countries routinely crossing the international border during scientific research. We need an increase in regularly scheduled and charter air service between Alaska and the Northeast USSR. We also need increased monitoring and reporting on shared migratory birds and creation of new protected areas for them on both sides of the Bering Strait in accordance with the US-USSR migratory bird convention.

On the Park Service side, currently there is a joint US-USSR heritage working group that is working on the restoration of the Russian Bishop's house in Sitka. But a much more famous project, one that Presidents Bush and Gorbachev gave world-wide attention to this week, is the proposed Beringian Heritage International Park in Alaska and Siberia.

I want to say a few words about this. First of all, in the statement that was signed by the two presidents, they made it clear, I think, that they would like to see this park created by the end of 1991. I think that, if we are to meet that deadline, we really get down to what I referred to earlier as "working on the nuts and bolts". I wanted to mention to you some specific examples of what I mean by that. I think that certain areas have already been identified as areas that Soviets and Americans need to make decisions on. They include the following: we need to establish joint research teams to identify, assess, and document significant natural and cultural resources, and recommend proposed boundaries; we need to have joint seminars on public and local community consultations; we need to establish an internship exchange for Soviet and US Congressional and Parliamentary staff on legislative and regulatory considerations.

I think we should also pursue a visit by Soviet conservation management and parliamentary representatives to certain United States border parks, such as Glacier National Park and Big Bend, so that they can observe cross-border interactions that are occurring with some of our existing parks.

Now, a few of the others ones that I'm going to mention now apply really more to after the park is actually created, but I do want to touch on some of these because, I think it's important to look at what we need to address down the road.

We're going to have to think about setting up joint training courses for our respective staffs and establishing joint licensing procedures for scientific research. We're also going to have to address a cooperative agreement for travel and access, both ways for tourism purposes and for Native cultural exchanges.

Another thing that we're going to need to do, which I think may be fun actually, and that is we talk about adopting a joint emblem for material and facilities. We also should anticipate that we will sharing bilingual interpretative materials that include publications, exhibits, and films. We're also going to have to think about the fact of establishing direct radio communications between both our park headquarters.

I think it will be useful to have a workshop to develop a binational geographic information system, (the computer system that I mentioned earlier that the Park Service uses to such good advantage to enhance our ability to manage our resources).

Now, a couple people before this conference asked me some questions about the proposed park. And I'm going just make a few points, because this does keep coming up, over and over again. On the U.S. side, we are planning to have the Bering Land Bridge National Preserve. The intent is to limit the site to already existing preserve lands or park lands. We do not, in other words, anticipate or plan to create new park lands. Also, this is a point that's very important to understand, we have absolutely no intent of upsetting or disrupting present subsistence use.

Another point that I'd like to make about the establishment of the proposed international park is, I think that in setting up our teams, we need to consider, and bear in mind the value of an interdisciplinary approach -- we have such a variety of issues that we're going to be dealing with, ranging from resource management issues, to planning issues, to legal considerations. I think that a tunnel vision approach is simply not appropriate.

Last, I would like to offer a word of caution. In focusing our attention on the creation of this international park, I think it's very important to remember that

the park does not exist in a vacuum. We must be mindful of the corollary systems that support the park, the problems that we have, for example, with heavy metals and with plastics washing up on our beaches. These must be taken into consideration at the early stages; not at the end.

In closing, I would like to quote from John Muir, the world famous environmentalist and explorer. In his book titled, Travels in Alaska, he noted:

When we contemplate the whole globe as one great dew drop, stripped and dotted with continents and islands flying through space with other stars, all singing and shining together as one, the whole universe appears as an infinite storm of beauty.

Surely, there is no better place to contemplate the globe than here at the Top of the World. May our countries join together in that spirit to protect our precious planet.



Alaska natives engaged in subsistence fishing in Kobuk Valley National Monument. Photo by Robert Belous, National Park Service.

PANEL FIVE

MANAGEMENT OF PROTECTED AREAS

INTRODUCTORY REMARKS BY DINAH BEAR

This, I think, will be a very, very interesting panel. The topic is ideally suited as the closing panel for this conference. We have a number of people with a tremendous amount of expertise in these areas. We're going to rearrange the original order and start off with the Soviet presentations. We're quite pleased at being able to start off with a presentation by Lyudmilla Bogoslovskaya, who is chairing the working group that has been recently established under *Goskompriroda* to plan the International Joint Park that has been recently announced by the Presidents.

LYDMILLA BOGOSLOVSKAYA

*USSR Severtzov Institute of Evolutionary
Animal Morphology and Ecology*

[Editor's Note: Much of the translation of this presentation was incomprehensible. I have done my best to make sense of the transcription, but any errors are solely mine.]

Creating the International Park, the one we've been discussing all this time and the one for which the decision to fund was signed by the Presidents, is a very responsible task. And it's not only for our two countries to do, it's an international task.

First of all, the Bering Sea is a region that has planetary significance. It's a source of Arctic flora and fauna. Second of all, it's a migratory crossroads for different types of animals, both marine and land animals. It's crossroads of two continents; North American and Asia and other areas. The animal and plant life of this area doesn't only belong to our countries, it's a feeding area for millions of organisms that are part of the biosystems of Mexico, South Asia, and even Australia. If you see the millions of birds that migrate from Australia to the Bering Strait, it's an unforgettable sight.

Our countries take on a very great responsibility as a result. And in our work, we should remember, based on the correctness of our actions, the success of many of the wildlife of many countries will depend on it.

Second of all, many of those present know that the Bering Strait is multi-faceted. We talk about the fact that it unites us -- yes, of course that's true -- but the Bering Strait is divided into two parts. The American part, because of the currents from the Yukon River, is warmer. The Soviet side is cold water. This is why, in the biological standpoint, it's richer and more interesting. The Soviet side of the Bering Sea is one of the interesting productive areas of the world ocean.

On the Soviet side, we find 25 different species of very rare plants, which have migrated to America, or didn't make to America and stayed only on that part of the Bering Strait. Many protected, rare species of marine mammals and birds are found there. I won't list them all because we don't have enough time.

The third point are the cultures. This area is the cradle of Eskimo civilization. It's a unique Arctic civilization of hunters who hunt marine mammals. From here, the Eskimos use their boats (their umiaks) to cross in both directions along the Coast of North America and the Coast of Asia. This is the source of Eskimo culture. I would like to say that the entire Coast of the Chukchi Sea is covered with unique cultural sites.

Fourth of all, people today have to decide which part of the Chukchi Peninsula they would like to propose to become part of the International Park. We've become familiar with the American side. We've been to Nome. We saw part of that park which would become part of the American contribution to this International Park.

Before we left Moscow, there were discussions, and agreements had been reached. We had suggested an administrative region, the Provideniya-Chukchi Region, which actually is basically the entire area of the Chukchi Peninsula. It is an area populated by more than 20,000 people. There are 13 villages. I think, at this level of our human development, we have no right to expel the population. Also, a big part of this population is composed of migrants.

It's a good thing that there is no mining activity taking place there at this time. So, we have two Native peoples; almost the entire population of Asian Eskimos (those are three independent tribes -- Inupiat, the Sereniki, and the Chaplain Tribes), and the Maritime Chukchi, whose lifestyle is similar to that of the Eskimo and reindeer breeders. Together these two groups comprise the majority of people settled in the area.

The fifth point that I would like to raise -- I think all biologists present will understand me -- the center of the life of this region is the sea. All the archaeological sites and all the settlements are all located on the shoreline because the people lived by the sea. I'm describing the Soviet side, which I know very

well. We feel that the sea will have to be protected to a far greater degree than the land.

In my discussions with the chairman of the Chukchi Autonomous Region we reached an agreement to that effect. The territory of the cultural heritage would have to be protected even to a greater extent and would have to include the entire region of the Bering Sea. We place our priorities in this respect -- this doesn't mean that we have to create any additional protected areas; we just must learn in such a way so as to preserve the historical cultural heritage on both shores of the Bering Sea -- and in this order: the cultural heritage, then the sea, and then the land; in that order.

I think we will convene a group of specialists to form a working group. We plan to invite American specialists in October or November and form the first session of this group.

It should be clear to you that we have very difficult legal problems. This is our first experience of this type in the Soviet Union. We don't want to have to move people. We want to involve them in the creation of this International Park. We hope, and we already have some information based on a poll taken of traditional settlements, that the local population will support the creation of this protected land and sea territory.

The migrant population, of course, is another question. It's a difficult question. One can understand this. But we also have to convince them and make them responsible, but not to displace them. Well, those people who will feel uncomfortable in this new situation will leave on their own accord. But those who have lived there for many years, 20 or 30 or more years, and those who were born there, they also support the creation of this special area, this park.

I think it's very important to take the American experience into consideration in regulating economic activity as this territory is actually the central area which is inhabited by those Native people who depend on the sea for their livelihood. It's a smaller area than yours, but it's more populated.

Well, this is how we see the situation in our task. I think that at our first meeting the American side will help us to write legal regulations and use their experience in managing parks in their own country, because we don't have such an experience.

ALEXANDER TRANIN

*Senior Research Fellow
Institute of State and Law*

The picture that we have drawn in the last couple of days at this conference, to a certain extent, allows us to imagine the scale of the problems we face and problems that might arise as we move into the future. In this connection, I would like to say a few things. Developing a legal regime for protecting and using the environment which we will need to develop in order to set up an International Park, taking into account many overlapping interests of the local indigenous population, and industry and natural conservationists, I think will give rise to quite a number of problems of a legal nature that are related to the regime of the International Park.

Viktor Naumov, one of the Soviet delegation members, said that there is a plan to work a project for oil and gas development and mining in the Chukchi Peninsula. From Pamela Bergman, we heard the information that testified to the fact (and this is if I understood her correctly) that the coastal region of Alaska, to one extent or another that is adjacent to the International Park, can, over time, turn into a region of fairly active industrial activity; what I mean here is, mining for gold, oil and other minerals on the shelf.

Together with increased fishing activity in the same region, such activity can present a certain threat to the ecosystem that is located on the territory proposed for the International Park. In this way, I certainly understand the worries expressed by Eric Smith and other speakers about the possible pollution emanating from the oil drilling activities on the Shelf, as well as anxiety about the industrial companies not taking into account the interests or the wishes of the local people.

The reports delivered at our conference have logically drawn to this conclusion and also raise the following question: How do we want to envision the future protected area of Beringia? In this connection, I would like to bring the subject of my talk around to this subject and give you a few of my views on it. Indeed in our own Soviet practice, there are no precedents for establishing such types of

comprehensively envisaged protected territories. There has not been such a precedent, despite the great variety of protected areas in our country.

As for developing a comprehensive approach to the cultural and historical heritage of the Bering Sea area, I would like to draw your attention to three circumstances, which have been reflected in the presentation of Lyudmilla Bogoslovskaya. First of all, our countries have different degrees of preparedness in approaching this issue. On the U.S. side, their part of the International Park is to be a National Preserve. The territory contains almost no people. On the Soviet side, the area considered for inclusion in the International Park contains a fairly large population and is home to economic development. What is more, there are no areas there that come under any particular legal protection regime.

The second important point with respect to protection of Beringia is the conservation of cultural heritage and traditions, monuments, and traditional subsistence use of the land by the Native population.

Third, this is a more complex question which involves, within the framework of the International Park, combining industrial hunting and fishing of marine animals and the traditional subsistence hunting of the Native population. We need to figure out a way to accommodate both of these interests without inflicting any kind of damage --without infringing upon either of them.

Based on this, I think it's necessary to think about the organizational and legal form that we should choose together in setting up an international park, a park in which we will be able to combine both natural, historical, cultural, ethnic, and other aspects of life. As I already said, there are no such similar types of protected territory that have been regulated by legislation in the Soviet Union and establishing a legal model for this comprehensive type of category will require a certain amount of time and effort. We must take into account that, in order to create such a category in this specific instance, it will be essential not only to take into account the interests of the Native population, to preserve the natural environment, but also to create necessary conditions for recreational use of the area.

This is our common problem. I think that, at the first stage of developing this International Park, our efforts should be concentrated on developing a legal framework or structure for this protected territory, both on your side and on our side.

The second stage should include, on both the parts of the US and the Soviet Union, a way to combine our two legal regimes for the protected area in the framework of our joint project. And accordingly, we will need to stipulate organizational and legal aspects of inspecting the area. Certain conditions we already have worked out. The practice of both countries in the area of nature conservation and environmental protection has been quite similar. The overall priorities taken as a basis for insuring protection of these territories and the theory and practice of our countries directly influence each other and enrich each other. Over the last 10 years, we've taken the best principles which seem to be the most important elements for environmental protection in this area.

What I mean more than anything else, is two main areas, which illustrate the theoretical approach to science and to the management of certain natural territories. These are: preserves and the national park system in the United States. The trend that we see now towards development of national parks in the Soviet Union and the establishment of corresponding protected areas in US preserves confirms what I've just said.

I don't want to take too much of your time, but I would like to say that in the introductory remarks made by the head of our delegation, Professor Kolbasov, he already addressed the prospects for developing legislation for environmental protection and how this has been carried out in the past few years.

I think that the project that we now are developing in our Institute -- I mean the draft legislation for protected areas -- can take into consideration the newly emerging categories. To sum up what I have said, in the context of the issues that we're discussing at this conference about the establishment of a joint international nature protection area, I think that, in further discussion, we will need to keep in mind the unique character of the area; its historical and cultural significance; the rich archaeological heritage; the subsistence use by Native populations. All this will

require a fairly specific form of organizing the regime of the protected natural area.

In spite of some problems that might arise as we are working out this plan, I think we will always be able to find mutually acceptable solutions that take into account the interests of the local population and, keeping in mind, how significant this project is, not only for our countries, but for the world community as a whole.

COMMENTS BY DINAH BEAR

Thank you, very much. I think that was a very clear and interesting outline of the challenges that you see ahead for lawyers as well as others in formulating the plans for your park.

As many of us know, there has been a very significant rise in the number of non-governmental organizations that are focusing on ecological issues in the Soviet Union during the past two or three years. We're very lucky today to have a quite qualified representative of a major organization of that nature in the Soviet Union to address us. Maria Cherbasova is a zoologist and ornithologist by training, but she is currently serving as the Executive Secretary of the Social Ecological Union, which is, as I understand it, a coordinating or umbrella organization representing about 200 non-governmental organizations in the Soviet Union.

MARIA CHERBASOVA

Executive Secretary/Social Ecological Union

Well, I think it's quite symbolic at this high level conference that NGO's are also represented. I think the greens are that part of the human population which has an instinct for self preservation more than any other segment of the population. And in our extremely troubled times, people such as these are extremely important.

I will discuss those questions which concern our NGO most of all, and that which interests me personally. If we take our whole country into consideration and our main concern which exists today -- we're mainly concerned with the condition of the human population and the health of the people of our country.

I've been in America for quite some time now at the invitation of American NGO's. And I know it's very difficult for you to imagine the ecological situation which exists in our country. We have more than 100 cities in which it is very difficult to live, or practically impossible to live. All encompassing industrialization, which has taken place in our country, sacrificed people. We have a very high infant mortality, many handicapped children are born. The lifespan is shortening. In some regions, it reaches only 50 years.

I must say that, in this regard, Chukotka is not an exception. Maybe you read in the newspaper, "Moscow News" not too long ago. There was an article called, "Chernobyl in Chukotka". The authors are Dr. DuBansian and Yvedikia Gyre, a people's deputy of the USSR. On the basis of their research conducted this autumn, the lifespan is very low in this region; only 45 years. They feel that these are the after-effects of nuclear testing in the Far North.

Really, you see here a classical ecological change, so to speak. Radioactive materials are absorbed into the feeding matter of deer; the deer eat the food. Then people eat the meat of the deer, because this is the basic of the local population, and as a result, there is a large degree of cancer in the population.

We heard many times now that the creation of the Park would serve to protect the Native population. Well, it's clear that, in order to preserve the local population, you have to protect the environment in which they live. But I think, in our conditions today, this is simply not enough. We need a specialized medical biological program. We've begun working in that direction. We have an NGO, a fund for social ecological initiatives. This summer, they will conduct an expedition to Chukotka to inspect the medical condition of the local population. They would like to work together with American scientists and conduct comparative studies of the corresponding populations in Chukotka and Alaska.

If any of you would be interested in this, I would be very glad to put you in contact with the right people. From the bottom of my heart, I rejoice at the changes that are now taking place and the improvement between the United States and the Soviet Union. But at the same time, I understand that this will mean an increased pressure on the economical development and exploitation of this area, especially in the area of oil and gas exploration. We greatly fear this.

First of all, we're afraid of ecological catastrophes, such as the one that took place not too long ago at Valdez. Well, we understand mistakes were made, but this incident wasn't simply a question of a mistake being made. It's a monstrous catastrophe; it's an oil Chernobyl. And its after-effects are not yet known to us.

This great danger will always exist side-by-side with oil exploration and drilling. You weigh on one hand these very fragile ecosystems, these very unique ecosystems and animals that are nearing extinction and also the Native population which will not survive if the ecosystem is damaged any further. On the other side, you have the growth of oil drilling. When you consider these facts, I think that we must stop. I think it's a question of priorities. This question was not addressed fully enough.

The emphasis on the question of social priorities --there's another great danger which is appearing. This is the danger of US-Soviet joint venture enterprises. The fact of the matter is that we are seeing a growth of the type of dirty industrial production which is no longer possible or permitted in the United States. We are now conducting a special program with American NGO's to conduct

consulting works for such projects. I think such projects will also take place on this side of the Bering Sea.

It's very dangerous for us for the following reason, because even the best laws in our country are simply not enforced. The conclusions that I will draw from this, that in order to really preserve the Beringia area, we have to severely limit the economic development of this area to make it a non-industrial zone as much as possible and to look at alternative means.

We have to learn how to use secondary resources. For example, we produce a great deal of the secondary production which is not utilized, or is used with great losses. I think we have a great deal in common in the sense that your companies and our ministries have the same disease: greed. Because, if the only thing they know how to do is drill for oil or dams, then they will continue doing so until they've extracted the last drop of oil or dammed the last river without thinking about how much this is really necessary.

It's wonderful that, finally in the Far East instead of labor camps, we will now have a National Park. I think this is a new era in the history of our country. People will come here and see the wonderful natural surroundings and they'll be spiritually uplifted. But this problem of the local population, which we discussed, is extremely important. Up to now, only those people who will be visitors to the parks have been taken into consideration. I think we should worry about those people who live there. Again, it's a question of priorities.

I know there's an NGO which is against the hunting by the local population of walrus and whales. After having talked to Lyudmilla Bogoslovskaya and having thought it over, I finally understood that you can't preserve the Eskimos if you don't allow them to sustain their livelihood in such a manner by means of hunting, their use of their skin boats. So, I think our nature lovers and the more radical among them, they will have to come to terms with this. I think the social aspect is the most important regarding this question, and I hope that the problem of people will be taken into consideration and play a proper role, alongside all the others which were discussed here.

I would like to apologize for drawing such a dark picture, but I think we should think very carefully about all the dangers involved because we have a thing of great value. We have it in our hands, and we have no right to make mistakes.

REMARKS BY DINAH BEAR

With profound apologies to the interpreter, we are once again changing the order. Mr. Golovkin would like to discuss, and I've asked him to discuss, some of the scientific aspects of establishing the proposed park. He's going to discuss that briefly, and then I propose to open up for discussion of what we've heard so far.

Mr. Golovkin, whom we heard from on the Marine Mammal and Migratory Bird Panel, is an expert in migratory birds and also in natural preserves. He's with the Priroda Scientific Research Institute of Goskompriroda in the USSR.

ALEXANDER GOLOVKIN

*Priroda Scientific Research Institute
Goskompriroda, USSR*

I would like to say that, throughout the whole world now, we see a movement toward preserving biological diversity. Biological diversity is considered to be our overall natural heritage. If we take a look at the planned international parks, we will see that, on both sides of the Bering Strait, there are species of animals and plants which need particular protection because they are on the verge of becoming extinct.

Both in the Soviet Union and in the United States, there are lists of endangered species. And if, in the United States, the situation is more or less satisfactory with respect to these species of birds, both like the Emperor Goose and Sandhill Crane, the situation in the Soviet Union for these species are very close to extinction now. On the other side, on Soviet territory, there are still large numbers of such rare species as the Ross Gull and the Spoonbill Sandpiper, but they are very rare on U.S. territory. We can protect and preserve these species if we combine our conservation efforts.

There is an agreement to preserve migratory birds between our two countries. Unfortunately, it is not yet working adequately. I think that this is, first of all, because we do not have enough personal contact between us among those people who are working on specific biological problems related to these migratory birds. The International Park will stimulate this kind of contact and expand it. The difficulty in working with these kind of species in the future International Park involves the fact that it's not enough to just leave intact the territories where they nest, but we also need to take measures to restore their populations, to increase their numbers, and maybe even to resettle them into other areas. We can achieve this if we provide for the appropriate services within the framework of the park. We need to be very aware that both sides will have to make financial investments to do this.

If you ask a biologist what Beringia is, usually the answer you will get is that's it a center for a type of evolution. I'd like to remind you that species living all around the world now come from this area. Murres and many other species of birds evolved from ancestors that lived here. This evolution has not yet come to an end. It is still continuing all over the globe.

So, let us unite our efforts and let us be people fighting for evolution in the correct direction.

COMMENTS AND QUESTIONS

COMMENT BY LARRY MERCULIEFF

I'd like to commend the Soviet delegation for their enlightened approach to consideration of people in the ecosystem. I have worked with indigenous groups from every single continent in the world, and the latest one was working with the World Conservation Strategy, which is a document to deal with environment and development, and the World Conservation Strategy Document did not incorporate or acknowledge the necessity for linkage with indigenous people as part and parcel of their policies for preservation enhancement of the environment.

I would like to urge both sides to, in understanding the difficulties with cross-cultural communications in the construct of the Heritage Park, to attempt to involve indigenous peoples at the very onset, as opposed to developing the legal environmental scientific constructs or principles, or concepts first, and then approaching the indigenous peoples. If you do this, you will avoid the possibility of what I have seen world-wide in harm to mutual trust.

COMMENT BY UNIDENTIFIED SPEAKER

Yes, as one who's worked in the Bering Sea for about 10 years, I would like to make two comments. Today, we've learned of the Native relationships in the Bering Sea area. Yesterday, we heard the discussion of how much walrus means to the Native people in the food they have. Then we heard John Rogers talk about the contaminant levels in the walrus population. As the person who is senior author on that paper, I would be very disappointed if this group doesn't follow up to answer the question that is continuously put to me by the Native people when I go out to those areas, and that is, "Is our food safe to eat?"

I think we have a population of people on two continents who have the same question. And I'd like to have that answered for them somehow, because I've been working with the question since 1984. And we cannot get a definitive answer. So,

I would ask this committee or this group to see if that cannot be followed up and give these people an answer.

My second comment is -- and I tremendously agree with Larry Mercurieff -- that the Native people must be involved at an early stage in the development of this International Park. It was a tremendous, exciting experience for me to go to the Siberian side and the American side as part of this original team investigating the International Park. And as I contemplate how we could get the Natives involved, I'm going to suggest an item again, and that is, the National Park Service operates a park called Canyon de Chelly at the request of the Navajo Nation. And I would suggest that perhaps the Siberian and the Alaskan Natives be taken to that park to give them an example of how a group has invited the National Park Service in, and how this is working. There are problems, to be sure; there are problems anywhere. But I think this would be a good example then to follow, in establishing how we would operate this park in the future.

COMMENT BY LYUDMILLA BOGOSLOVSKAYA

I wanted to add a couple of things to what was just said by the previous two speakers. We were planning to carry out our work exclusively in conjunction with the Native population since all the research work of the three expeditions was made possible by marine hunters. I think that you cannot offer people a formula device from above. The people have to participate in formulating their own future, therefore I think that Tom Albert, the biologist from Barrow, had a very interesting idea. He was talking to us about creating a project -- well, only in our region, but I think it applies for the entire Bering Sea region, a project called 'People's Science'. For us, this aspect of sciences is important as well so that our Natives receive money for their scientific observations. They'll do it by contract with us. Thus far, they do it only out of love of nature and because they are well disposed towards us. But I think that this principle has to be incorporated in the Park, at least on our side; maybe not your side, because it doesn't involve the Native population.

COMMENT BY ASYLBEK AIDARALIYEV

I want to say a couple of things about what the NGO representative said and what she said was published in "Moscow News". "Moscow News" I think in some way will go beyond the boundaries of a scientific approach to a real problem. There is a commission set up to work on this problem under Academician Sidof. I was a member of the commission, and I wanted to tell our American colleagues that, first of all, there is no background radiation above normal level in Chukotka. In the polar regions, it's always a little bit higher, in all polar regions. And the background radiation in Chukotka is the same as that in all polar regions. Secondly, there is no correlation between background radiation and cancer.

In the article it says that one of the representatives of the village said that everyone in the village is dying of cancer. Well, I doubt that's true. Cancer statistics show that, in Chukotka, the typical form of cancer is stomach cancer, but it doesn't go beyond the levels of cancer elsewhere in the Russian Federation. The article also said that everyone in the village died of tuberculosis. Well, that can't be true. It is true that more people die of tuberculosis in Chukotka than elsewhere, but it certainly can't be everyone in the village. It's just not true. So, when Americans ask us if they can go there, if they'll die of cancer or tuberculosis, if they're going Chukotka, I'd say, of course there's no such problem. These are just exaggerated reports.

As for the work of the medical expedition, I was surprised to learn about this because there's a special commission under Academician Sidof. They are studying the health of the Native population. The Academician Sidof group is studying the respiratory systems of those people. They recently published a monograph on upper respiratory systems, a work recently published in the Soviet Union, along with a joint program with the U.S. medical study here in Fairbanks, studying the health of the Native populations. This problem was discussed in detail two weeks ago during the Conference on The Health of the Native Populations of the North.

As for the studies on cancer, we set up a program on studying cancer in the Circumpolar Region. And this project includes scientists and doctors from Magadan. Unfortunately, dozens of expeditions come to Chukotka every year. We

figure there's one researcher that comes there per person who lives there. These expeditions are, to a certain degree, disrupting the local population. We hear that locals are just sick of them. I think that now the issue is not whether people should go to Chukotka and repeat the same kind of experiments that were carried out years ago, but rather the more important thing is to set up a databank. Here, I think the important thing would be, including for people who are here, to collect all the data that was set up in Chukotka, but then was dispersed and taken back to Moscow, Leningrad, and elsewhere. All that data exists; that information exists everywhere except in Chukotka. That's the whole problem.

So, I just wanted to say a couple of things about what was said about "you can't drill for oil or gas and so on". I agree. As the director of an institute, I agree, but as a medical doctor, I would say that we do need to drill for gas. The thing is that, in Chukotka, all heating is done with the help of coal. Recent studies have shown that the Native population suffers from this thing called bronchial-wood effect. In other words, relatively young people are suffering a disease which leads to premature death. In all probability, if we are to look for alternative replacements to coal by some kind of fuel, I think it would make sense, because coal pollution is so harmful to people's health that it's really time to think about replacing this form of fuel. As for scientific studies in the area of the International Park, I just want to add, once again, that there are large numbers of researchers. There's a large research program on human ecology, which includes researchers from Canada, the States and the Soviet Union.

The Soviet researchers are the Far Eastern Branch of the Academy of Sciences and the Siberian Branch of the Academy of Medical Sciences. I think that their basic job is going to be precisely the coordination of already existing data and developing all possible approaches for preventing typical sicknesses among the Native population. For some reason, we seem to forget that a large role is played by -- I ran into a situation in Chukotka where food preparation led to people dying from botulism. But in Chukotka, there aren't that many cases of botulism occurring naturally, so why did that happen? This deserves to be studied.

No one studies the soil conditions in Alaska or Chukotka. Why is that? Meanwhile, we have data showing that cardiopathic diseases occur as a result of

poor soil conditions. No one studies the accumulation of heavy metals including marine mammals. Meanwhile, we're showing an accumulation of salts bearing heavy metals in human organisms. We need to study this. We also have a problem that doesn't exist in Alaska. Heavy metals are deposited on plants which are then eaten by cattle, whose milk is used to feed the elderly and the young. This is also a problem. This is one of a series of problems that needs to be studied in order to prevent man becoming ill through his interaction with animals; marine mammals, cattle, and so on. In other words, this all goes under the framework of what we can call human ecology. This, I think, could be one of the main tasks of the establishment of this park; to define the health issues concerning man in these conditions.

COMMENTS BY OLEG KOLBASOV

Dear friends, I feel a professional frustration which forces me to take the floor. I'm afraid I'm going to have to make a critical statement. We are very happy to have lawyers work here along with professionals in other fields. But I also understand that, in the United States, there is a crisis. It's a crisis of too many lawyers, whereas we have a shortage of lawyers.

Look and see who's on the panel. From our side, we have four people; only one of whom is a lawyer. From the American side, we have at least four lawyers; at least among the people I know. This is interesting. How are we to discuss the legal status of the future International Park? Here I should say that I'm the only lawyer among the Soviet participants in this discussion. Here the lawyer talked in a non-legal fashion. I can tell you quite definitely that, based on his presentation, I can't tell what kind of legal status there is in the park today and what kind of legal status there will be in the Park if a park is set up. This is a lawyer's task as I understand it.

Also, I should apologize once again. But I'm upset when people speak unclearly. I hate foggy thinking. So, I feel compelled to say today that on the territory that we have set aside as the International Park, we have Soviet powers, Soviet authority. It is under the USSR Constitution and other legislation. We have

civil law, criminal law, and basically the entire legal system at work on that territory. We have such institutions as territorial waters, the economic zones, the Continental Shelf, all these. Now, I wanted to ask the lawyers what will happen if this National Park is established? Will the USSR lose its state sovereignty over it or not? Will the USSR Constitution no longer be enforced there, or not? Will criminal law be enforced, or not? I haven't heard anything said on this matter. I think these are matters of substance. I understand that the creation of an International Park will take place in the framework of an international agreement. Agreements always include certain amendments that are in line with one or another legal system. Well, it would be interesting to see what kinds of corrections are going to have to be made into the set-up of the legal system for this International Park.

I did not understand why the question of resettlement came up; resettlement from the territory of the future park. In the Soviet Union, we already have 10 parks. There were no resettlements in any of those parks. The population lived there as it did previously. I think that the existence of wildlife there works in tandem with the continued presence and the lifestyle of the human beings there. There can be no talk about human resettlement. It's clear that human beings and normal human life will continue to exist on the territory of this park. Of course, it might have to be somehow adjusted in order that it comply with the ideas and goals of the park as it is created.

I also wanted to note that, of course, it would make sense for us to continue our cooperation, the cooperation of Soviet lawyers with biologists, because as I understood in Lyudmilla Bogoslovskaya's speech, there would be some legal problems that could come up with this. She invited the American lawyers to help with some of the legal framework. Well, what are Soviet lawyers going to do? Let's see what happens.

COMMENTS BY LYUDMILLA BOGOSLOVSKAYA

I think Dr. Kolbasov has not seen our side of the Park. And the other

gentleman didn't either. We're not talking about resettlements here. You must not have understood correctly.

COMMENTS BY OLEG KOLBASOV

I understood what was said, I heard what you said. I was saying that there can be no talk of resettlement . . .

COMMENTS BY LYUDMILLA BOGOSLOVSKAYA

No, but I think the question deserves to be brought up. But what you might consider to be a national park in connection with USSR is not something that we're satisfied with. And we have already talked about this with you. A National Park in the USSR is a very low status of protected territory. I think we don't need to be having a sort of feudal conflict between Russian princes here. I think that there's no need to hurry up; we don't need to rush here. My appeal to the American lawyers does not signify that I don't want to work with you. You did not understand me correctly. I think that I will work with American lawyers exclusively through you.

COMMENTS BY UNIDENTIFIED SPEAKER

It does seem to me that there are a great many legal questions, as both Lyudmilla and Oleg have stated, that have to be addressed before this park can be created. In the United States, our park system follows the crimes of the state where the park is located, the assimilative crimes legislation and doctrines of our federal law.

That may not be the proper system on the Soviet side. And traditionally, questions of criminal of law are the questions of the government of the people there. On the other hand, we have to have some international rules for this park because there will be visitors from Japan and Korea. And it will be necessary to

harmonize the rules on both sides of this border. We already -- for instance, poaching of black bears for shipment of the gall bladder to Korea, which is a big problem. And it can become a problem in this region too.

So, I think the criminal law questions do become important. I think also that there is not an integrated planning process up until now on either side of the border. We have just barely begun the process of planning for this park. And we have one year to try to bring the disciplines together. So, I welcome this kind of exchange, because it has accomplished that, in part.

COMMENT BY UNIDENTIFIED SPEAKER

Madam Chairman, one quick comment, and that is, we wrote the brochure for the International Park. We addressed this very question, and our comment was that the park would follow the rules and laws of the country in which it is located. And the International Park would come through an agreement. But the rules and laws would follow the specific country.

COMMENT BY UNIDENTIFIED SPEAKER

But that may no longer be an adequate approach because of the changes that are going on within the legal system of the Soviet Union, right now.

COMMENT BY DINAH BEAR

It is, however, as we say in Washington, "the current administration's position."

COMMENT BY GEORGE COGGINS

We academics are not bound by administration policies.

COMMENT BY DINAH BEAR

No, absolutely not. Obviously, part of this discussion is to discuss whether or not that is adequate or whether we should take different approaches. But you said exactly what I was going to say and that is that the discussions up until now are set forth in the booklet produced by the National Park Service in English and Russian. What was contemplated in the context of developing that work up until this point has not been a park which would come under international law or some sort of hybrid law. It was very specifically separate management, which would be coordinated and activities which would be coordinated. The actual management and activities on the park area would take place under the domestic law of both countries.

REMARKS BY DINAH BEAR

We're going to switch now to the American law involving parks at other protected areas. Then move into protected marine and aquatic areas, and back to international regime and hopefully continue some of the discussion that we just ended with.

To start off with, we're going to have Gary Widman, who currently is with the law firm of Bronson, Bronson and McKinnon in San Francisco. He has had a great deal of experience with protected areas, both as general counsel of the Council on Environmental Quality from 1974 to 1976, and as associate solicitor for Conservation and Wildlife in the Department of Interior from 1980 to 1981. He has also been director of Staff Attorneys for the U.S. Court of Appeal for the Ninth Circuit. He currently is Chairman of the California Council of Trout Unlimited.

GARY WIDMAN

*Attorney at Law
Bronson, Bronson and McKinnon*

In the discussion so far on wildlife, there's been a discussion of fishing and subsistence fishing, but none of sportfishing. I thought I would open with a little discussion and a few comments on that issue, and then go into my assigned topic.

As some of you know, the NGO Trout Unlimited is the largest of the sport fishing organizations in the U.S., with approximately 75,000 members. It has entered into an agreement (perhaps the first NGO to do so) with the Russian Committee on Hunting and Fishing for an exchange of seminars on sport fish and fishing. The Russian Committee has also given Trout Unlimited an exclusive franchise for bringing and encouraging American fishermen to visit the USSR.

While I do not purport to know precisely how much sport fishing occurs in the lands and waters of the Bering Sea, I am sure it is substantial since there is a very large sport fishery simply in the Bristol Bay area alone.

These facts are relevant in several ways. If a nation wishes to receive the maximum economic return for each salmon taken, that can be achieved only by and through sport fishing, especially guided sport fishing, which provides many times the dollar return per salmon as commercial fishing. Iceland, for example, manages its entire fishing economy on the theory that, once the salmon approach is close enough to Iceland to be determined to be one that will return to Iceland, it's managed entirely for sport fishing thereafter, for those same economic reasons.

With catch and release limits, the same salmon can be so used economically several times while increasing the salmon population and upgrading it with breeding of the largest and strongest fish, and at the same time, providing great enjoyment and sport to the people.

So, for development of a fishery for maximum economic return and maximum enhancement of the fishery, and widest enjoyment by citizens of both countries, the

sport fishing potential of the subject areas must be fully and carefully developed within a framework of effective conservation limits.

In regard to the earlier discussion of the USSR's recent arrest of the Japanese drift-net fleet, let me say that Trout Unlimited has treated drift-netting along with acid rain as among the most urgent of conservation issues confronting us. It has actively lobbied the State Department, NOAA, and Congress on this issue for several years. We view drift nets as a "strip mining" of the oceans and, in Trout Unlimited's opinion, should be not just regulated but banned. Does anyone claim there is such a thing as a good drift-net or a necessary drift-net? Commercial fishing will collapse far more quickly if drift-nets are permitted than without them, and sport fishing for anadromous fish will collapse along with it.

So, if we are farsighted, perhaps we'll understand, that in the long run, despite the benefits for those who might undertake it, it's not only bad, it holds the potential for potential permanent ruin of life in the sea and should therefore be banned world-wide as promptly as possible. I notice incidentally that the Governor of Alaska took the same position yesterday, according to the morning papers.

I want to commend the representatives of the USSR for the arrest of the 140 drift-net poachers. We would hope they would take the same action again if similar circumstances arise, no matter what the nationality of the poachers. I can assure you that, when the USSR's arrest of the drift-net fleet was announced in the United States, there were unanimous cheers from the 75,000 members of Trout Unlimited. And after hearing from the Alaska sport fishing community in the last few days, I can add that many thousands of Alaska fishermen and citizens shared as well.

We will all closely follow the trials of those arrested, and especially look for the details of government involvement, and hope to see prosecutions to the full extent of the law.

So, for all the suggestions that we have heard in this meeting that the USSR may not have the resources or the will for enforcement of some of its environmental rules, we have nevertheless seen the most courageous and most

effective act of environmental enforcement in the world in 1990 performed by the USSR.

And with that, I'll go to the talk on Protected Areas.

I would like to focus on what I believe will be helpful in light of the time available, and that's a brief history of the facts and events that prompted creation of three of the more common types of protected areas, followed by a brief description of a legal model, which I hope will answer some of Dr. Kolbasov's questions for consideration in setting up an organization for managing the Bering Straits and Bering Sea.

It is fair to say that the various "protected areas" in U.S. law all developed in response to threats of futures where either aesthetic impacts would be blunted, or shared ecosystems, species, resources, rivers, or historic sites would never be the same or would never be as productive in the future as they might be with a more farsighted management. In some cases, roles for industry were eliminated, in others they were encouraged, but within limits that guaranteed that the same restrictions would apply to all, and that the management overall would sustain and enhance the resources in the long run.

Like the design of any other protected area, the design of a Bering Sea park protected area must be guided by a shared vision of alternative futures. If the future of the usual course of business is left unchanged, what will the area be like in 10, 50, or 100 years? What different future is needed? When those questions are answered, we can very quickly design the legal structure for the protected area.

To illustrate some of this, consider the birth of the earliest U.S. national parks. The so-called peace dividend at the close of our own civil war provided an opportunity to turn the energies of the people, including the military, into exploration and settlement of what was, at that time, a large blank spot on U.S. maps extending from the Rocky Mountains to the Sierra Nevada range in California, and which was labeled only the "Great American Desert."

Major John Wesley Powell, the colorful one-armed geologist, undertook the exploration of these blank areas on the maps of the American West. He would be accompanied or followed by those expert in the then-new art of landscape photography, and by artists skilled in the renewed art of American landscape painting such as Moran, Bierstadt and others.

After first exploring the Yellowstone area with its geysers and wildlife, he foresaw the future as to what would probably happen as the miners, ranchers, and timber companies followed his expedition. He conceived and later presented in Congress the idea that the Yellowstone area should be closed to entry under the homestead and mining laws, and should be set aside as a park for all citizens to enjoy for all time. Moran and others took the photographs and made the paintings that persuaded Congress that this was indeed a special area, primarily because of its aesthetic values. Here was a unique resource that could bring beauty and recreation, or perhaps more accurately, recreation to the spirits of Americans forever. And so it was set aside as our first National Park.

Major Powell later led the first expedition to explore the Grand Canyon. And while there were some differences in the history of events, again after displaying photographs and paintings, and considering the most likely future for the area, the Congress made it into a park.

In California, an inventor and small businessman with an interest in mountains, John Muir, moved to the Sierra Nevada range, after an eye accident, and personally explored almost every square mile of what is now Yosemite National Park and most of the rest of the Sierra Nevada range as well. Yosemite Park, at that time, was an area used for sheep ranging.

He was a bright and articulate man, and when the City of San Francisco proposed to dam one of the valleys in the Yosemite area to supply water for an earthquake-prone San Francisco, he generated public opposition to that project. He eventually lost his battle over the Hetch Hetchy Water Project. The Yosemite National Park was established around it, in part to make the best of a controversial and somewhat compromised situation. It protected the most spectacular area remaining in the Sierras. His colleagues in the Hetch Hetchy fight went on to form

the Sierra Club, which would later become a leading environmental group promoting protected areas around the world. The "potential future" of Yosemite was very sharply brought into focus in the Congressional debates. The park resulted from a Congressional decision that did protect the area from the sheep, from further predation by the City of San Francisco water department, and in the process, produced one of the two most widely enjoyed parks in the world.

In the same era, then-President Teddy Roosevelt contemplated the rapid destruction of the forests of the Rocky Mountains, the Sierra Nevada, and the Far Northwest, which then was Oregon and Washington. The timber companies, at the time, had, in effect, hired their own armies of men who battled each other, and who could overwhelm the federal and territorial law enforcement presence in those areas.

Not so much out of a dislike for the timber industry, but out of a concern that the timber industry was taking timber for short-term profits, was destroying forest land, and leaving the cut areas in conditions that could not again produce productive forests, he set up the Forest Service and the National Forest System. Unlike the national parks, which had been set up primarily for their aesthetic, educational, recreational, or even spiritual values for man, the National Forests were set up to change the most probable commercial future of short-term timber profits, and to provide instead a future with a long-term supply of forests, not only for commercial timber, but for forest-based recreation and wildlife as well.

As a final example, Teddy Roosevelt had seen the near-extinction of many species of birds, particularly ducks and large mammals in the west due to market hunting. Now in the late 20th Century, it's hard to appreciate the incredible wildlife slaughter of the 19th Century, but Aldo Leopolds' Sand County Almanac has a few examples. Those of you who have read it, recall that he tells his story while cutting a tree on his Wisconsin farm and reflecting on what happened as his saw cuts through each annual tree ring. When he gets to the ring for 1896, he notes that in 1896, 25,000 prairie chickens were shipped to market from the small Wisconsin village of Spooner alone. As he cuts further, in 1879 on November 8th, the markets of Madison, Wisconsin were glutted with ducks at 10 cents each. On the 10th of September, cutting further, in 1877 two brothers shooting in Muskegan

Lake bagged 210 blue winged teal in one day. In 1873, a Chicago firm marketed 25,000 prairie chickens, and the Chicago trade collectively bought 600,000 at \$3.25 per dozen. Cutting on, in 1872 the last Wisconsin turkey was killed. 1871 ended the Pioneer Carousal in pigeon blood. Within a 50 mile triangle, 136 million passenger pigeons were estimated to have nested. Pigeon hunters by the score plied their trade with net, gun, club, and salt lick, and train loads of pigeon pie moved and east and south to the cities. But it was the last nesting of passenger pigeons in Wisconsin, and nearly the last in any state. Perhaps there's a lesson there for the driftnetters.

In any event, in 1870, he finally notes that one market gunman boasted of killing 6,000 ducks in one season in a lake near Chicago. So, you can see that by the time that Teddy Roosevelt began establishing national wildlife refuges, 15 or 20 years after most of those events I just described to you, it was almost too late. It was too late to restore wildlife to the level that had existed in the mid-19th Century. It was not too late, however to provide a base which would allow at least a partial restoration of some of that wildlife.

Other types of protected areas have similar histories in that their creation was a response to a vision of the future, which if unaltered, would be a future without valuable parts of America's natural heritage.

So, applying that the Bering Sea effort, we must recognize that we must refine our thinking and identify our needs, and let me suggest that you consider, as sort of a rough model for discussion, the Great Lakes Fisheries Commission. Don't let the term "fisheries" distract from the merits of this institution as a device for jointly managing parks, endangered species protection, or pollution control. But the Great Lakes Fisheries Commission is our most successful bilateral management effort. Let me mention a few things this body has accomplished, and it has accomplished much. And because it is so successful, I suggest we should consider it as a model here.

It was first set up in response to the threat of the sea lamprey, or lamprey eel, which in the 1940's and 50's appeared poised for complete destruction of all the fisheries in the Great Lakes. Drawing on its bilateral committees, the Commission

recommended actions to both nations that have resulted in testing and control programs and legislative measures that have now nearly controlled the lamprey.

When the commission focused on the pollution of the Great Lakes, Lake Erie, 15 years ago, was often cited as one of the worst examples of eutrophication in the world. Its committees recommended a series of water quality control measures stronger than those the countries were originally prepared to impose. These recommendations were adopted by both countries, and were reflected in a supplemental U.S.-Canada 1972 Great Lakes Water Quality agreement. The result of their work has been a restored lake system, restored fishing, restored beaches, and a strong favorable economic response from local citizens and tourists alike.

To rehabilitate the fishery after the lampreys were controlled, the Commission recommended introduction of lake trout, steelhead, and Pacific species of coho and pink salmon, along with others. This stocking program built a multimillion dollar sport fishing industry, where no significant industry had existed before.

So, in light of the achievements of the Commission in its particular setting, we might note the structure which permitted these exceptional results to occur. The Great Lakes Fisheries Commission operates in a structure of committees that report to the Commission. The committees are in charge of various areas of research and study, and of are responsible for coordinating with the member governments. For example, there is a Habitat Advisory Board, the Board of Technical Experts, the Lamprey Committee and many others.

These committees are all staffed by staff members from both countries, and they conduct and authorize research in their designated areas. The Committees report to the Commission itself, which is made up of four members appointed by the U.S., and four by Canada.

The Commission itself has no independent enforcement authority. The chairmanship is alternated between a Canadian and American each year, and the funds for the Commission are provided 60% by the U.S. and 40% by Canada. While it has no independent enforcement authority, it serves as the definitive body in collecting information and encouraging national actions in regard to the Great

Lakes area; that is, national actions in both countries. It offers a neutral resource management forum for collecting information from both sides and with the best thinking of both sides, and develops recommendations for the Great Lakes areas as a whole.

After considering the Committee reports, the commission then recommends joint action to both governments which recommendations have had a history of being well received and have resulted in mutually beneficial measures that would not probably have been achieved by either country acting alone.

A similar institution might be considered here. We've already heard of extensive cooperation between the U.S. and the U.S.S.R. in fisheries, anthropology and endangered species research. Each side has something to offer to an improved understanding of the problems and to the development of the most effective solutions to those problems.

In this conference, we have focused on the need to protect anthropological sites, Native villages, marine mammals; we focused on pollution control, oil and mineral development. Will these problems be better solved by acting now to set up a vehicle for jointly collecting information, jointly designing research, and jointly negotiating policies, and jointly focusing and taking action?

If the answers are "yes", then consider the possibilities of a joint commission comprised of 10 or 20 members appointed by each nation, which includes representatives of the existing organizations dealing with parks, pollution control, fisheries manager (both sport and commercial), marine mammals, Native groups and others. Committees of the Commission might guide research in both countries and report back to the Commission with the knowledge gained, and enforcement authorities could coordinate the efforts of both countries.

Perhaps it's most important to note that we already have bilateral agreements on high seas fisheries and other topics that affect this area. At the same time, it's hard to predict the precise need for environmental regulation measures of oil, mining, and other activities. These facts suggest that the most important quality of any new joint commission will be its dynamics. It must be a growing and changing

institution that is able to see the needs for shared information, for shared and prompt decision making, for making plans for the uncertainties of the future, and for stimulating and coordinating the necessary action of both countries in advance of the time they are needed.



Cove and mountains on the Bering Sea coast of the Aleutian Islands. Photo by Harry Upton, Center for Marine Conservation.

GEORGE COGGINS

University of Kansas School of Law

Before I start, I would like to express my personal gratitude to two among many of the people whose work over many years made this meeting possible. I refer to Oleg Kolbasov and Dinah Bear. I think you should understand that this is the result of many meetings over a long period of time.

I have written a 42-page paper outlining the law governing management of the United States National Wildlife Refuge System. It covers the history, the statutes and the litigation. If you want these legal details, I will be delighted to send you a copy. But given the time limitations, today I want to focus on five points. The fifth, however is neither short nor sweet.

First, land ownership in the United States is a very important thing. If the government doesn't own a tract of land it can't use it. So, if we were talking about establishing a park from private property, the government would have to buy it, and we all know that our federal government says that it can't afford that.

This is not a problem in Alaska because the federal government owns about 60 percent of the land area. And we should not forget that the State of Alaska, which should be a partner in this venture, owns another 20-odd percent. Park establishment therefore is not going to be a big financial burden on this side of the Bering Sea.

The federally owned land in the Alaska, and in the Lower '48, other than the land used for normal governmental purposes, is classified into one of five basic categories. What can be done on these lands depends on the classification. Wilderness lands are the most restricted. No roads, logging, mining, or vehicles are allowed.

The National Park system has a whole bunch of sub-categories including national monuments and national preserves. The National Park Service must manage for both preservation and recreation. Consequently, our parks have roads and tourist facilities, but commodity development is prohibited. In Alaska the only

difference between parks and preserves is that hunting is allowed in preserves, but not parks.

The third category is National Wildlife Refuges. They are established for wildlife protection and propagation and the Fish and Wildlife Service must manage for that primary goal. The Secretary of the Interior, however has discretion to allow all recreational and commodity uses in wildlife refuges so long as these uses do not substantially impair wildlife values. The courts have upheld Fish and Wildlife actions that have limited human use, and courts have also ordered the agency to prohibit harmful uses in several notable instances.

Finally, the lands under the jurisdiction of the Forest Service and the Bureau of Land Management, which are really most of them, are to be managed for multiple use and sustained yield. Although these agencies must preserve the productive capacities of the land, the lands are intended for mineral, timber, livestock, and recreational use. You can see that wildlife refuges are in the middle of this preservation/use spectrum. You can also see that, including the National Marine Fisheries Service, we have five main agencies doing this work for no particularly good reason except history.

The fourth point is that National Wildlife Refuges dominate the American side of the Bering Sea coastline. Now, from Attu, all the way around to Nome, most of the coastline has been designated -- or much of it has been designated -- within the Alaska Maritime, the Yukon Delta, the Togiak, the Izembek, and other refuge units. In addition, the islands in the Bering Sea, many of these are classified as wildlife refuges, at least in part. These coastal refuges on the Bering Sea aggregate about 27 million acres, which is about 11 million hectares.

This conference has sharply illustrated what ecologists have long known. Everything is related to everything else. If you increase fish harvesting past a certain level, you reduce sea lion populations. If you protect bowhead whales, you harm some subsistence communities, and so forth. That maxim and the entire Bering Sea has been and properly should be the focus of our talks, which brings me to Point 5.

We have heard very little about the shape an International Park -- Beringia Park -- should take, except that little bits of official policy keep leaking out in odd places. Secretary Lujan, President Bush, and now Ms. Harriman have indicated a willingness to dedicate the Bering Land Bridge National Preserve to such a park. The report of the joint reconnaissance study group is not heavy in detail, but it generally seems to point toward an archaeological or anthropological orientation, focusing on the human inhabitants of the area and their histories.

I submit to you that, if these emphases do reflect our current official thinking, then they are too narrow and short-sighted. We in this room are privileged to be a part, however small, of what, to me, is one of the grandest opportunities ever given to ordinary citizens to translate environmental rhetoric into conservation reality. The leaders of our nations obviously have not foreclosed reasonable options nor have they finally delineated boundaries.

Right now, the Beringian International Heritage Park is more of an inchoate idea than it is a concrete proposal. Certainly an enormous amount of study, negotiation, evaluation, drafting and legislation will be necessary before the ideal does become reality. To enter this phase, I believe that we should discard our official preconceptions and start with a broader and more comprehensive vision.

Now, look at the map again. Doesn't it strike anyone else as somewhat odd that a Bering Sea park would include, on the American side, only a present preserve that does not face on the Bering Sea? The conference, I think, has made it clear that the Bering Sea and the surrounding territory together comprise one of the more productive ecosystems in the world, nurturing uncountable numbers of birds, fish, mammals, and other wildlife. I suggest that incrementalism or ad hocism, which I guess is the response to a crisis that brings on another crisis to which to respond, is not the best approach to park creation.

Instead, "together" should be the key word. We should look at all the human biotic and inorganic components of this vast complex together and in relation to each other. Rather than building known shortcomings into the park proposal, I think we should try to do it right the first time. How should we do that? I don't know. But it does seem that one key is in the initial conceptual approach. Instead

of assuming that only one relatively small area on each side of the Bering Sea will be included, and only one theme stressed, a better starting point would be the opposite assumption, that is, begin with the idea that the entire Bering Sea itself and all lands within a zone a mile deep, 10 miles deep, 50 miles deep, 100 miles deep. All lands initially merit inclusion, and that all resources within that area are worthy of preservation and enhancement. So, we would start at Attu around the entire side, up to the Bering Straits, and then all the way down to and including Kamchatka. Thereafter, the areas with special problems or outside the conceptual scope, towns, privately owned enclaves, commercial areas, and so-forth, could be excluded or treated as in-holdings on a case by case basis.

Think of this. Integrated international management of all resources in this vast sea and surrounding seaboard would be a first in human history. On the American side, this could be accomplished with relatively few practical or legal problems because the federal and state governments own the great bulk of the lands that would be implicated. I know virtually nothing about the lands on the Soviet side, but I am fairly confident that they are not in private ownership. The International Park would necessarily differ in many respects from the traditional American National Park notion. Subsistence hunting, commercial, sport fishing, and mineral development; all of these sorts of things would have to be accommodated in some reasonable fashion. But just as we should expand our park vision, we should recognize that traditional American land categories are not always and forever. As you will hear later, marine sanctuaries, coastal zone management, national preserves all can serve as precedence for this larger notion.

There will be many who will be aghast at this notion, and even more will say that it is politically impossible. To you, I simply say two words: "Berlin Wall." Nothing, it seems, is politically impossible if enough people of good will are determined to achieve it. The unthinkable is now thinkable.

A larger geographic vision entails a wider human commitment. This proposal should not rest only in the hands of a few governmental officials. Native villages, commercial fishermen, marine biologists, oil companies, environmental activists, state and federal land managers, lawyers, loggers, politicians, and yes, even Ivory Tower

academics should have their say, not only initially, but on a continuing basis and on both sides of the sea.

At this point in the gestation of an international park proposal, I think we should be more concerned with scope and approach than with details. The limitations inherent in what seemed to be the current official ideas, should not be assumed until they are exposed to full and unbiased debate. In this circular way, I come back to National Wildlife Refuges in Alaska. Any larger concept or vision of an international park will make these coastal refuges or parts of them integral parts of the proposal. The islands in the Bering Sea, the great curve of the Aleutian Island chain, the vast nesting and breeding grounds in the Yukon-Delta, and the coastal rookeries all would play significant roles in the human and ecological interpretations of the park. And that's how it should be.

REMARKS BY DINAH BEAR

Thank you very much, George, for fulfilling my expectations. We do need to move on but before we do, I'd like to see if there's any immediate reaction from any of the Soviet panelists about Mr. Coggins's proposal. Or, you may want to comment later.

COMMENTS BY LYUDMILLA BOGOSLOVSKAYA

Professor Kalbasov, I will not be intimidated by you. And I will say that our biologists were thinking along these same lines. Of course, we cannot make any decisions for the American side. We are very glad that it was precisely a lawyer who proposed this. There is an agreement already from the researchers from the Kamchatka about thinking through a water preserve because the Bering Region cannot hang in the air. Something that was already said here -- for example, shipping and oil drilling on the Continental Shelf, and other human activity, can't occur in a vacuum. Maybe it can't occur in the ideal variant proposed by George, but we do have to think about it, otherwise the park won't be able to exist. After

all, gray whales are born in the sub-tropics, in the California lagoons and travel 6,000 kilometers to get to us.

I can say that every year we see whales that were injured or trapped. They are large animals, maybe they can make it out, but other animals can't, so we have to create the best possible conditions for marine life.

I won't say anything about the specific forms that this should take, but it needs to be done and it needs to be done jointly by both sides and jointly by lawyers and biologists. We will tell you what we want, and you can tell us how this can be done in reality.

COMMENTS BY VIKTOR NAUMOV

I would like to talk about a problem that was discussed in the previous two presentations. First of all, the use of drift-nets and fishing. I gather from your presentations yesterday and today, for the United States, this is a big problem. For the USSR, this problem exists as well. We support these efforts on the Soviet side.

At the fourth session of the Soviet-Japanese Fishing Commission, it was proposed to ban drift-net fishing by 1992. And I wanted to say a few things about how I would like to see sport fishing developed in these parks. In short, I can say that in the USSR we have a pretty strict system of sport fishing. We have a set of legislation. There are regulations concerning sport fishing, licensed fishing, which, in the last few years, has become very popular, in these regions as well. Citizens are allowed to go fishing only with permission.

So, I think it would be good for this to be taken into account. We need to define certain things because local populations would then have some privilege over other nationalities or other ethnic groups living in Chukotka. I think that the experience of licensed fishing in Alaska is something that we need to consider, and not only licensed sport fishing, but we need to look at it more broadly so that there is both economic activity as well our amateur fishing, in a place that's designated as a park.

REMARKS BY DINAH BEAR

Next we will hear from the Americans on aquatic areas; protected aquatic areas. One presentation by Joseph Uravitch, which is the Chief of Marine and Estuarine Management Division at the National Oceanic and Atmospheric Administration (NOAA), and the second by Rachel Saunders of the Center for Marine Conservation, which is a non-governmental organization. Both of these individuals have spent virtually their entire professional career working in coastal and marine protected areas. Additionally, Joe Uravitch has served as NOAA's regional manager for state coastal zone management programs for the Great Lakes, South Atlantic Region, and the Gulf and Caribbean Region. Rachel Saunders has done extensive work on sea otters and other marine mammal related issues.

JOSEPH URAVITCH

Director, Marine Sanctuary Program, NOAA

I'm going to be talking about America's newest protected area programs, specifically the National Marine Sanctuary Program. This program is authorized by Title III of the Marine Protection Research and Sanctuaries Act of 1972. Sanctuaries are designated to protect areas of the marine environment which possess conservation, recreational, ecological, historical, research, educational, or aesthetic qualities, which give them special national significance.

The United States's first two sanctuaries were designated in 1975. Presently, there are eight designated sanctuaries protecting nearly 9,000 square kilometers of ocean. Six new sanctuaries are in development and four areas are under study to determine their suitability for future designation.

Of the eight existing sanctuaries, four are located near the Atlantic Coast, protecting the wreck of the Civil War ironclad ship the *Monitor*, and live bottom and coral reef habitats in the South Atlantic. Four sanctuaries are located in the Pacific Ocean protecting three large cold water ecosystems of the coast of California and a small coral reef area in American Samoa. Sanctuaries range in size from 0.64 square kilometer Fagatele Bay Sanctuary in American Samoa to the 4,053 square kilometer Channel Islands National Marine Sanctuary off the coast of Southern California. Some of the proposed sanctuaries are even larger, with sites as large as 8,000 to 10,000 square kilometers being considered. To properly manage such large areas, our program's philosophy of designation and management is evolving from one of managing discrete areas, to one of managing a series of important ecological cores surrounded by large buffer areas.

Sanctuary sites are selected and designated by the United States Department of Commerce's National Oceanic and Atmosphere Administration (NOAA). The purpose of a National Marine Sanctuary is to undertake comprehensive and coordinated conservation and management; support, promote, and coordinate scientific research and monitoring; enhance public awareness, understanding, appreciation, and wise use of the marine environment; and facilitate, to the extent

compatible with the primary objective of resource protection, all public and private uses of the resources of these marine areas.

This multiple use concept is, perhaps, one of the greatest differences between National Parks and Marine Sanctuaries, and one of the greatest challenges to the sanctuary program. Continued commercial use of some sanctuary resources usually continues after sanctuary designation. For example, many sanctuaries contain areas that traditionally have been used for commercial or recreational fishing. With the exception, when appropriate, of limiting certain practices which can harm specific sanctuary resources such as corals, commercial and recreational fishing activities continue in national marine sanctuaries, regulated by the Regional Fisheries Management Councils and the National Marine Fisheries Service rather than by the sanctuary program, except in those very specific instances.

The MPRSA requires NOAA to give consideration to existing uses in the designation of sanctuaries. Under the MPRSA, NOAA does not have the right to terminate any valid lease, permit, license, or right of subsistence use or of access", if this activity was in existence on the date of the designation of the sanctuary. NOAA does have the authority, however to regulate such activities. But, they must be treated differently than new uses proposed within a sanctuary which can be prohibited by the terms of designation.

NOAA is encountering a number of major issues in the ongoing operation of existing sanctuaries and the designation of new sanctuaries. This includes potential conflicts between commercial uses of the resource, as well as with resource protection requirements. Among these issues are commercial and recreational fisheries, marine transportation and the potential for marine disasters such as groundings and toxic material and oil spills, outer continental shelf oil and gas activity, water quality degradation, and coordinating decisions and resolving conflicts between government agencies with overlapping jurisdictions in these areas.

These are but a few of the issues that must be addressed during the designation of new sanctuaries and in the revision of regulations for existing sanctuaries. We are finding these latter two, water quality and inter-agency

coordination, to be especially complex issues in our proposed sanctuaries containing significant near-shore components.

Candidates for sanctuary designation are drawn from a Site Evaluation List prepared by NOAA. The existing Site Evaluation List, completed in 1983, consists of 29 marine sites that were identified and recommended for inclusion by regional resource evaluation teams in accordance with site identification and selection criteria established for the purpose. At that time, only sites with high natural resource values were considered for inclusion.

As a result of the 1984 amendments to the MPRSA, we will soon be adding sites possessing significant cultural resources such as shipwrecks and early human settlements. We also are reviewing the status of sites on the existing natural resource-based list and will be reviewing proposals for additional candidate sites early in 1991.

Amendments to the MPRSA in 1988, require that the sanctuary designation process be completed in two and one half years or less. The process used for designation is determined by three laws: 1) the MPRSA, 2) the National Environmental Policy Act (NEPA), and 3) the Administrative Procedures Act.

Five documents are prepared during the designation process. These are a draft and final environmental impact statement; a draft and final sanctuary management plan which describes goals and objectives, compatible uses, management concerns, the resource protection program, the research and monitoring program, the education and interpretation program, general administration of the sanctuary. We also prepare draft and final regulations; a Congressional Prospectus, which includes the above information as well as information about manageability, public benefits from designation, negative impacts, and management costs; and Designation Findings, signed by the Secretary of Commerce, which define how the sanctuary meets the legal requirements for designation.

The procedural steps for designation are as follows:

1. The process begins, for a sanctuary designation, with NOAA selecting a site from the Site Evaluation List. A Federal Register Notice is published analyzing how the site meets Site Evaluation List criteria.
2. NOAA conducts preliminary consultations with interested government agencies, interest groups and the public.
3. NOAA provides a written analysis of public comments.
4. If comments are favorable, the designation process begins with the announcement in the Federal Register that a site is an "active candidate" for sanctuary designation.
5. Within 30 days after the announcement, at least one one public scoping meeting is held in an area near the proposed sanctuary.
6. NOAA then prepares and publishes the Draft Environmental Impact Statement, Management Plan and Regulations. The public has 45 to 60 days to respond verbally or in writing.
7. A public hearing, or hearings, is held near the proposed sanctuary.
8. The documents are revised, taking into consideration comments received, and final documents are published.
9. Notice is published in the Federal Register announcing their availability. A 30 day public comment period follows.
10. The sanctuary is then designated by the Secretary of Commerce, with his/her signing of the Designation Findings.
11. The Congress, and the governor of any adjacent state whose waters will be included in the sanctuary, then have approximately a 90-day review period to veto specific regulations or to change the boundaries.
12. Assuming no significant changes are made to the Secretary's proposed designation, the sanctuary designation becomes official with the publication in the Federal Register of final implementation regulations, and site operations begin.

Once designated, on-site staff are needed to manage the sanctuary. NOAA's intent is to provide on- or near-site staff to support the basic goals of the sanctuary program. Staff consists of NOAA employees, and depending upon the sanctuary, state employees or other federal employees, or a combination of these employees. Each site will have a sanctuary manager, an operations manager to handle logistical concerns, a research coordinator, education coordinator. For those

in the Park Service, you might recognize the uniform. That's because we employ Park Service staff at the Channel Islands Sanctuary, which we run in cooperation with the Channel Islands National Park. And we have rangers to aid in education and law enforcement. Additional staff are added based on need.

America's coastal and marine protected areas programs are growing rapidly. By the end of 1991, the number of designated National Marine Sanctuaries will have increased from 8 to as many as 14, and the ocean and coastal area protected by the program will have grown from an existing 9,000 square kilometers to as much as 25,000 to 30,000 square kilometers. Our comparable Estuarine Research Reserve program, managed in cooperation with state governments, will also grow, increasing from an existing 18 sites to as many as 24 sites by the end of 1991.

We look forward to the challenge of trying to improve the marine and coastal environments of our country, to continuing our work with people of other nations in the improvement of the world's environment.

RACHAEL SAUNDERS

***Pacific Marine Protected Areas Coordinator
Center for Marine Conservation***

Perhaps some introductory remarks are in order, especially for our Soviet guests. A little background on the Center for Marine Conservation: the Center is the largest citizen environmental organization in the United States dedicated to the marine environment. But it is one of thousands of citizens and environmental organizations in the United States that are concerned with the environment in the broad sense. The Center, established in 1972, is dedicated to protecting endangered and threatened marine species and their habitats, and to conserving marine ecosystems and resources. We seek to achieve our conservation objectives by conducting policy-oriented research, by educating the public and policy makers, and by encouraging the development and implementation of sound policies through citizen participation and citizen oversight. We are, in effect, watchdogs. We favor establishing, supporting, and using administrative processes/responsible advocacy that compel wise protection and conservation of marine wildlife, ecosystems, and resources.

We are supported principally by membership. We have 110,000 members in the United States. We also receive grants and contracts from individuals, corporations, foundations, and government agencies, as well as bequests and some net proceeds from publications and the sale of marine-related items.

I will now turn to our marine protected areas program. The Eastern Rim of the Pacific Ocean includes a wide array of marine ecosystems. The Center's Marine Protected Areas Program works to protect these and other sensitive and unique marine habitats, especially through the National Marine Sanctuary Program (NMSP) that Joe Uravitch just described. Through research and education, promoting citizen involvement, we focus public attention on the NMSP, the sanctuaries themselves, and the sites being considered as sanctuaries. The objective of our program is to see to it that the strongest possible protection is provided for these marine areas and for compatible human uses of these marine areas.

The conservation of coastal and marine waters in the United States lags decades behind conservation of terrestrial areas. Yet, in 1972, our country committed itself to making a special effort to conserve its marine heritage through the NMSP. Since its early stages, we have firmly supported the program, its mission and objections. And though it's still in its infancy, we see it as a valuable tool in promoting wise stewardship of the marine environment through its goals and programs aimed at resource protection, research, and education. The NMSP also provides an excellent opportunity for creating public awareness of the importance of the ocean and for rallying public support for the specific measures that are necessary to protect it. Creating such a constituency is a challenge, for ocean matters appear to some as far removed from their everyday experience and on a scale that can confound one's thinking. For many others, the ocean is still deceptively inexhaustible and indestructible. Creating such a constituency is not a role that government this is equipped to fill, and therefore citizens must.

In our view, the development of a vocal and active constituency is essential if this the NMSP is to fulfill its potential and its promise of conserving our natural heritage. For a scheme for managing a region's resources in the integrated fashion, that is the centerpiece of the sanctuary program, depends on the acceptance and involvement of a variety of local stakeholders, those local residents and local communities. This type of citizen involvement has been facilitated, in part, by the process of designating sanctuaries; certainly it is a major component of the Center for Marine Conservation's activities, and I will touch briefly upon those now.

We have a couple of different approaches we take. In our work in support of this program, we have conducted research and surveys of potential sanctuary sites. Indeed, CMC site evaluations of potential Pacific Coast sanctuaries for Monterey Bay (off California), the Outer Coast of Washington State, and Northern Puget Sound in Washington laid the substantive base for Congressional action in 1988, which mandated the designation and/or study of these sites.

This information has also served as a baseline, and is aiding in the development of the draft documents, environmental assessments Joe Uravitch referred to. As he described, it is through an elaborate process that these

documents are developed, reviewed, refined, and revised. Requirements for hearings and consultations are built into the Act and into NOAA regulations, and they provide interested organizations and individuals a critical opportunity to participate in defining the scope of the sanctuary, its size and location or boundaries, and its protective measures (that is, guidelines or regulations). Since the management plan for each site is individually crafted, providing important flexibility, which is unique to this program, this process is the core of each and every sanctuary designation. This process takes time, and while it certainly can test one's patience, the program's deliberateness and care and considering public input is really quite refreshing.

To give you an indication of the kind of response in this public process, there have been as many as 500 people or more showing up at one hearing to consider a sanctuary site, and at 8 initial hearings on the Northern Puget Sound site in Washington, over 1,000 people attended.

The job of informing the public about the process, as I have stressed, is a critically important one. When people are comfortable with the information, they are more likely to participate in a positive way. We have utilized a number of different public education approaches -- with the emphasis on coordination with local, as well as state and national groups on the establishment of coalitions aimed at building what we call grass roots support for the sanctuary sites, and hopefully involving or reflecting the mix of people and concerns in the area. We have also developed newsletters and alerts, and brochures that highlight the program and identify specific actions people can take. Workshops/Conferences are also useful tools for information sharing and the identification of issues of concern. There are other opportunities for the public to participate. As Joe Uravitch mentioned, NOAA has indicated that they will be opening up the Site Evaluation List for the consideration of additional sanctuary sites.

We certainly endorse that decision as an opportunity to update the list to include sites whose status has changed, for which new information has become available, or ones that were overlooked or excluded during the initial process. While the list includes many of this nation's most significant marine areas, it is far

from inclusive. For example, there are no sites from the State of Alaska, this region, or the area off the Hawaiian Islands on that list.

Public support for the program can also positively affect funding levels for the program. Indeed, while designation is a critical first step, fulfilling the program's mandate for on-site management and protection requires that adequate monies be authorized and appropriated. The expression of public support to the Congress has resulted in increased funding levels and in brightening prospects for future funding. Continued public expression will be critically important in securing adequate support for this important program.

Obviously, the program, as all programs, has not been without controversy or free from problems. I've already mentioned funding as an area of concern. Inadequate funding in the past has hindered the program's process, although that's not the only thing that has hindered the program's process. Things are slowly turning around in that area, and we continue to be hopeful for the future. Adequate funding is obviously terribly important if these sanctuaries are going to be more than paper parks.

In the early years of the program, there were also quite a number of misconceptions about the intent and the purposes of the designations. Since that time, and during the reauthorization process, Congress has sharpened the program's purposes and policies as well as its procedures. Struggles do go on, however, mostly over what are and what are not "compatible multiple uses" -- how, and if to control the mix of uses, allowing for multiple uses while insuring that the overriding objective of resource protection is maintained. This struggle has been especially acute with regard to offshore oil operations, the oil industry and some other federal agencies viewing the sanctuaries in general as an obstacle to development of oil reserves, despite the fact that the waters encompassed by sanctuaries represent but a tiny fraction of the lands available to OCS leasing.

On the other side, there has been an overwhelming public support for bans on oil and gas operations. Those bans have been instituted in three of the sanctuaries, all of which are in California. Each of those bans has not come without a fight, though public and state agency positions eventually prevailed. Sometimes, as

supportive as we are of the sanctuary program, we have not always been pleased with the agency's stand on these issues, or the fact that they haven't stood as firm to protect resources, in some cases, as we would have liked them too.

There have also been situations that have arisen lately which have led to unjustifiable delays in the release of some of the environmental assessment documents. Even though those documents were prepared some time ago, this is happening for the sanctuary site in Monterey Bay where, although NOAA has done its job in completing these draft documents, they are at the moment being "held hostage", as we call it, by the Executive branch of government here, who is struggling with larger decisions about offshore oil development. This has effectively trampled on the public participation aspects of this program, which we hold so near and dear. As noted earlier in my talk, the program was also poorly received here in Alaska, in the early 1980's, primarily as a result of inadequate and ill-timed consultation with the public.

Any reconsideration of the sanctuary program here is something we would like to see. It would clearly require the full involvement at the very beginning of the process of local communities and interests as well as coordination with and involvement of the state. Sanctuaries here should come from the ground up and not from the top down.

In closing, we believe that the sanctuary program offers a unique opportunity to states and perhaps between nations to evaluate jointly critically important ocean areas whose resources may be harmed by uncoordinated use. We think the program has yielded important results, and while much remains to be learned about the practical application of an ecosystem approach, the program has gained important expertise and experience, and is capable of making a unique and significant contribution to long-term protection of the marine environment.

Marine conservation is still a new idea, just as land conservation was more than 100 years ago. We hope that marine protected areas may someday be as common, as effective, and as well supported as terrestrial parks are today. The public's involvement is a critical link in building a long-lasting program and in insuring this wise investment in our future.

REMARKS BY DINAH BEAR

Jon Elkind will be moving us from the domestic ocean or aquatic environment to the regional seas environment. Jon has spent several years with the Organization for American and Soviet Exchanges, and joined the Council on Environmental Quality about eight months ago as a policy analyst, concentrating principally on international environmental issues. He'll be discussing the Regional Seas Program under the United Nations Environment Program.

JONATHAN ELKIND

Council on Environmental Quality

Over the last two days, we have heard a wide variety of opinions on the conservation and management of the Bering Sea region's unique resources. I know that I have learned greatly and, as I'm sure is true for many others, I've enjoyed having the opportunity to hear the views of specialists from a wide variety of professional backgrounds and different types of organizations. It's particularly heartening to hear debate, even among people from the same country, for this clear debate allows us to reflect with perspective on how interests coincide and conflict in our own countries, and it can only improve policy-making processes in the long run.

Healthy debate, however, gives rise to some opinions which are surprising to hear. While some who have spoken before me have suggested that the time has come for the USSR and the US to take a comprehensive look at the conservation and management issues in the Bering Sea region, others disagreed, saying that we are better off not over-complicating matters; we're better off not trying to be too ambitious.

I would like to take a couple of minutes to discuss the management of specially-protected areas under the Regional Seas Program of the United Nations Environment Programme, because the Regional Seas Program clearly signals that international natural resource management can succeed in the Bering Sea region,

and its approach to specially protected areas might provide a good starting point for the considerable work which now lies ahead, given our President's recent declaration.

My belief in the value of the Regional Seas Program derives from the following. First, Regional Seas have successfully been established in seas which were bursting with political complexities and even conflicts. Second, the Regional Seas Program provides a flexible approach which can be applied in accordance with a given locale's particular conservation and management needs. Most importantly, the Regional Seas Program relies very heavily on a philosophical underpinning that has been noted already by earlier speakers, namely, that after twenty years of pursuit of more effective international environmental protection, it clearly does not make sense to confine our efforts to media-specific or piecemeal approaches. To resort to what has already become a cliché, environmental degradation knows no boundaries, neither political boundaries, nor delineations between species. As we have been reminded by colleagues from the natural sciences community, individual species often comprise different parts of a single ecosystem.

The UNEP Regional Seas Program grew out of concern in the early 1970's for the health of the world's oceans. Major oil spills and blatantly degraded water quality in densely-populated basins such as the Mediterranean Sea had convinced the world that action was necessary to save those oceans. The United Nations Conference on the Human Environment, held in Stockholm in 1972, led to the creation of UNEP. UNEP's Governing Council, in turn, agreed to focus on oceans one of its priority issues. And, in 1974, the Regional Seas Program was founded, with the first program established by the Barcelona Convention, known more formally as the "Convention for Protection of the Mediterranean Sea against Pollution" coming into effect in 1978.

The UNEP Regional Seas Program is credited with introducing the concept of framework conventions, an innovation that paved the way for tremendous flexibility and progress on international environmental issues. Each Regional Sea is established by the signing and ratification of a basic convention -- an umbrella agreement.

In addition to the legal framework, each of the Regional Seas has a so-called action plan, which lays out time-specific details of collaborative research, data exchanges, training efforts, and other activities. Funding is provided on a voluntary contribution basis by the participating nations, although UNEP has generally provided some start-up support.

In light of the many comments traded back and forth during the last couple of days about the difficulties of integrating the perspectives of hard scientists and policy-makers, it is also interesting to note the important role played in the Regional Seas by the International Union for the Conservation of Nature and Natural Resources (IUCNNR) as well as other international, regional, and local scientific and non-governmental organizations. They have provided valuable baseline data on environmental quality and a variety of other critical types of support.

At present, there are nine operating Regional Seas agreements dotted around the globe. Discussions are additionally underway regarding the possibility of establishing (or in one case resuscitating) Regional Seas activities in the North West Pacific region, which in this case is defined to include China, Japan, North and South Korea, and the USSR -- but apparently not the Beringia area. Additionally there are discussions going on concerning the Black Sea, the South West Atlantic, and the South Asian region.

All of the above brings me to what we in the United States called the "\$64,000 question": What significance does the Regional Seas Program have specifically in the connection with specially-protected areas? The significance is twofold: First, almost all the realities of the Beringia region have been accounted for in one or another of the previous regional seas. To use an example for the purposes of discussion, one can look at the specially-protected areas protocol under consideration in connection with the convention on the Wider Caribbean Region, otherwise known as the Cartagena convention. It stresses both protection of natural resources and protection of traditional ways of life, an approach which has recently been stressed in the declaration by our presidents. It focuses on scientific research and monitoring, which would give an opportunity to assess, as was suggested earlier by Mr. Taylor from the Park Service, to assess the levels of contamination of walrus meat, or other scientific issues. It also addresses

emergency contingency planning, and particularly the protection of rare flora/ and fauna and their habitats.

The wider Caribbean protocol on specially protected areas, tries not to disturb traditional Native ways of life to the greatest extent possible without, on the other hand, endangering species. It also sets out the goal of establishing parallel legislation, parallel standards, for protection of the land and sea areas covered under the protocol. I would add that a problem, which has been mentioned a number of times in the last week or so, during which time we have been traveling with the Soviet delegation, is the difficulty attaching to different understandings of what a National Park signifies.

Finally, the draft language for the Wider Caribbean specially-protected areas protocol requires the use of environmental impact assessments, a critically important concept which I have not so far heard under discussion in relation to the concept of the US-Soviet international park or preserve.

The other significance of the Regional Seas Program relates specifically to its flexibility. If one were to consider moving down the path suggested by Professor Robinson at the beginning of this conference, that is down the path to comprehensive resource conservation and management in the Bering Sea, a protocol on specially protected areas would be an obvious first component. Other pieces, perhaps one expanding and elaborating on the excellent work of the Coast Guard and the USSR Ministry for the Merchant Marine, could possibly be folded in later.

This is not to say that the Regional Seas Program is without its pitfalls. Many have noted that the program suffers from what even the layman knows to be a standard pitfall of international legal regimes; that is, the difficulty of enforcement across international boundaries in cases of violations. Many would suggest that compliance with the terms of regional seas agreements results either from a sense that compliance is in a nation's self-interest or, at the very least, that it results from an unwillingness to be identified abroad as a nation which is unwilling to be a good neighbor. This has arguably been proven true even in such cases as the Mediterranean regional sea activities, where arbitration techniques are even written into the agreement in anticipation of such enforcement dilemmas.

An earlier speaker, in support of what he called ad hocism, noted that the Soviet Union and the US have had success in reaching agreements in connection with specific crises in resource conservation and management. By agreeing to create a joint international protected area, our Presidents have opted to take an important step beyond crisis management. They have moved us in the direction of a more pro-active, perhaps even integrated, policy of stewardship over the unique natural abundance of the Bering Sea region.

In the past it surely has taken time for our nations to respond to areas of clear, common interest. Our nations, indeed, have spent lots of time arguing about the size of the negotiating table as the previous panel has suggested. I do not at all blame people for maintaining a healthy degree of pessimism about the inhabitants of their respective capitals. But to suggest that we simply should not bother trying to exercise foresight in the management of our shared living resources is to mutate the phrase, "If it ain't broke, don't fix it," into "Even if it is broke, don't fix it."

The UN's Regional Seas Program is one international regime which has much of value to contribute to our discussions of the legal and administrative underpinnings of the newly-announced international territorial aquatorial area. It may also be a model which can move us towards effective, comprehensive natural resource management in the spirit of global stewardship.

NICHOLAS ROBINSON

Pace University School of Law

I shall yield my time to Oran Young, who I have an enormous regard for in his long time work studying the resources of this area, and Alexander Temeshenko whose international reputation in this area of shared resource and law is extraordinary.

Let me just say one word, and that is "justice". Justice in Beringia will require us to develop and cultivate that value with respect to the indigenous peoples of this area, and with respect to the species, the wildlife of this area. As the United Nations World Commission on Environment and Development demonstrates, the Bruntland Commission, our globe is undergoing severe change right now. The change is faster than we living beings have ever experienced since the beginning of life on our planet. And it is that rate of change which requires us to rapidly change our human behavior.

With respect to the justice to the people of this area, we should consider the Circumpolar Inuit Conference and its conservation strategy. This should be a basic planning document for us to consider. With respect to the justice with species, I think we have to take a look at the fact that we are the stewards or the trustees in this area for the wildlife that goes over several continents. We are managing only a small part of the homeland of these species.

All parks and sanctuaries that I know of in the world have evolved separately and in a fairly unique way. If you put all of the *zapovedniki* and parks in one place they would be bigger than all of India and Pakistan. We have only one year to add this new Beringian Park to that group of collected areas. And in doing so, I think we environmental lawyers have learned that we cannot protect nature alone. We are effective only because we are allied with the environmental scientists.

And I would say one of the failures of environmentalism in the Soviet Union is that it has not had the strong rule of law to reinforce the protection. The scientists that established the *zapovedniki* system in the 1920's were world leaders,

and yet under the time of Stalin, half of that area was eliminated, and of course the lives of some of these scientists were also eliminated.

To protect nature and to give justice to all peoples, it is ultimately necessary to have a law-based society or the rule of law. I think, if anything, we need to cultivate the strong caring for nature among jurists as well as among scientists of all types.



Walrus at Arakamchechen Island, USSR. Marine mammals are important in the diet of local residents. Photo by Paul Haertel, National Park Service.

CLOSING SESSION

INTRODUCTION BY DINAH BEAR

I asked Oran Young to do the concluding talk on the American side for this conference because he has put in a number of years studying the international relations, and along with management issues, for shared living resources. And he specifically has spent a great deal of that career looking at the Bering Sea Region. He is currently Director of the Institute of Arctic Studies at Dartmouth College, and additionally is Co-Chair of the Working Group on Arctic International Relations; a member of the National Academy of Sciences Polar Research Board; Co-Chair of the Polar Research Board's Committee on Arctic Social Sciences; and Advisor to the U.S. Arctic Research Commission; a Chair of the National Academy of Sciences Committee on the Human Dimensions of Global Change; and a member of the Executive Committee of the Arctic Research Consortium of the United States.

He has written numerous books and articles specifically on management of the North Pacific area. I think you'll find his remarks quite relevant to our discussion throughout this conference.

ORAN YOUNG

*Director of the Institute of Arctic Studies
Dartmouth College*

I want to begin by saying how pleased I am by the growth of interest in international cooperation in the Bering Sea Region, or "Beringia", as some of us have come to call it. I'd like to tell you a little story to illustrate how far we've come in this regard in the last couple of decades.

In the early 1970's, shortly after the passage of the Alaska Native Claims Settlement Act, and along about the time of the signing of the U.S.-Soviet Environmental Cooperation Agreement, I began thinking about writing about the Bering Sea Region as an international resource region. And being a professional writer (academic) I soon got excited about the subject, developed some ideas which I thought others would, of course, want to know about. So, I arranged to give a seminar on my ideas at a rather prestigious Washington-based "think tank". We were in the process of putting together a little description of my talk to go out to the people who would be invited to this, and I used the term "Beringia" in the material I provided for this talk. The person, who was a very distinguished economist, in fact, who was organizing my presentation, said, "No, no, you can't use that term. Everybody will think it's some kind of an exotic disease." But I soldiered on and wasn't daunted by a little ignorance of that kind, and in due course a couple of years later in the middle 1970's, I, in fact, put my ideas together in the form of a book on resource management in the Bering Sea region.

The book is called Resource Management at the International Level. I went to my publisher and I said, "Look, this is a book about the international relations of resource management, but it's really a kind of a theoretical case study. It's based on the empirical evidence from the Bering Sea Region." And so I said, "I'd like to call this book Resource Management at the International Level, the Case of Beringia." And the publisher said, "No, no, you can't do that. You can never sell any copies of that; nobody will know what you're talking about. You have to say, The Case of the North Pacific." And so, to this day, the book carries on its title page, as a sub-title, The Case of the North Pacific. But, the book is about Beringia. So, it's a great source of satisfaction to me that the Bering Sea Region

and even the term "Beringia" has now reached the level of acceptability where we can all talk about it and begin to deal constructively with the transcendent issues of the region that require international cooperation.

Now, I made a series of rather detailed notes for a speech to give here this afternoon that would tell you all about what we've learned concerning the question of international cooperation in resource regions of the world, and how they would apply to Beringia. But, in view of both the time, also quite frankly the interest and the response to the interest in things that have been said here, I'm going to throw away the notes that I've made for this speech, and instead what I'd like to do in the next 15 or 20 minutes, probably maximum, is to respond to things that I have heard being said here by various participants in various of your panels, and to see whether I might be able to distill certain themes, certain threads, that have run through this discussion, even though the individual presentations have, at times, seemed quite divergent and quite disparate, which might form the basis of some common ground for things that we could go on as we move on from this conference to acting on some of these ideas.

I have a colleague who always says, when it comes to meetings of any length, "Well the meeting was fine, but what's the residue; what are we going to take away from this meeting? What are we going to do about anything as a result of having had this nice set of conversations here?" I think some of these themes might help us to see what the residue is what sorts of actions are required to act on that residue. I have seven points that I'd like to present to you in this context, with this background in mind.

The first of my points is that it seems clear to me that we need to think about Beringia as a complex interconnected ecosystem that transcends jurisdictional boundaries, includes resources heavily used by humans (have been heavily used for a long time), and is highly sensitive to disruptions even in its individual component parts, which are interconnected with the rest of it. This, it seems to me, has a number of very distinct implications for what we do about cooperation in Beringia. One is that we need more and more to think in holistic terms. We need to be thinking about modeling the ecosystem of the Bering Sea Region rather than thinking in traditional conservationist's single-species approaches and calculating the

maximum sustainable yields for individual species. Holistic perspective is certainly an idea whose time has come and it's nowhere more apparent than it is in the case of the Bering Sea Region.

Another implication of this is that we need to marry in a serious way -- go beyond lip service, -- to marry in a serious way the contributions of the natural scientists who know about the biological and physical aspects of this ecosystem and the social scientists who know about the cultural, human, and policy aspects of this system, so that we're really looking in terms of human environment interactions and relationships, and building a knowledge base capable of providing us the information we need about those relationships, rather than to disaggregate into the conventional discipline base; those sorts of contributions.

On the "do" side, it seems to me, we need all the sources of knowledge about this complex interconnected ecosystem that we can find. This, to me, means that we need not only to look at sort of conventional western scientific knowledge, but need to give a very real credence and a very real place to the sorts of things that the permanent residents, the indigenous peoples of this region know. For example, the things that they know about, longitudinal trends; the things that have happened over very long periods of time which are often missed by scientists who take snapshots when they come for individual field seasons and try to generalize on that basis.

Of course, we need to think about the Bering Sea Region as an international resource region. In that respect, it joins a class of similar international resource regions that we know something about. It joins the class of regions that include Antarctica, the Mediterranean Sea, the Caribbean and a number of others. We are gradually building up some knowledge based on our analyses of other members of this class which could well transfer to what we know about the Bering Sea Region, and I might add vice-versa. So, that what we learn about the Bering Sea Region may very well transfer, in terms of its usefulness, its informativeness to our effort to deal with other international resource regions as well.

Now, my second point has to do with participation, and specifically participation in efforts to design regional management systems for the Bering Sea

Region. It seems to me, clearer and clearer, that we are moving away from a world dominated by conventional interstate or government--to-government relations, and that increasingly we are finding ourselves, whether we like it or not, faced with a situation in which there are new players, and new players whose interests and whose activities cannot be ignored. These are the non-governmental organizations; the business community in its various forms, the organizations of indigenous peoples, and for that matter, the activities of local and regional governments. More and more we find ourselves in a world in which we are dealing with the international relations of the State of Alaska and the Magadan Oblast just as much as we are dealing with the relationships between the United States and the USSR. Nowhere, I think, is this general trend toward the decline of conventional interstate, government-to-government relations more clearly illustrated than in the Bering Sea Region.

And, in fact, we see now almost an unleashing; a kind of an explosion, because the "Ice Curtain", as people have called it, the artificial barrier of the Cold War, has dropped away. There has been a kind of a rush to fill the gap; not just by national governments, but by all of these other new players as well. This is, it seems to me, a challenge, but also an opportunity as well. It's not easy, but the conventional world of interstate, government--to-government relations in a rather simple world. It's based on a few very powerful assumptions, and a great deal of simplicity resulting from the acceptance of those assumptions. The new world is in a more confusing and more chaotic world, a messier world, but also an exciting world. We have various responses that we've studied. We build non-state actors into national delegations to meetings. We think about observer status. None of these really works very well. The challenge, I think, is to find some new forms; some new processes that will allow for us to deal with the new reality regarding participation in the design of these management systems.

Now, my third point has to do with the question of meshing legal and administrative systems for joint management. This is hard work. I think that the kinds of questions that Dr. Kolbasov raised are very pertinent questions. They've got to be dealt with, and nobody should be under the illusion that this is easy. When you try to mesh; to build into a sort of compatible working relations, legal and administrative processes and procedures that have grown up in a certain

political and legal culture over a relatively long period of time, you've got hard work on your hands. By the way, I think the case of the Beringia International Heritage Park is a comparative easy case in this respect. It's an easy case because it really, in many respects, admits to the kind of a zonal treatment where you agree on certain common principles, but then you say, "Okay, each of you are going to be responsible for the implementation of those principles and the interpretation of those principles in your own particular geographically-defined zone or segment of the joint management area."

I guess that would be a harder and harder question when you're dealing with interactions that take place, not in zonally defined or delineated areas, but in the same sort of way you deal with very direct interactions between nationals of two or more different political systems, and prepare, for example, the relative ease of dealing with the park in this respect, we've problems of developing workable procedures -- joint procedures -- to deal with the interactions that are likely to take place, or are already taking place in the donut hole with respect to fishing and marine mammals. I don't draw pessimistic conclusions from this. On the contrary; it's kind of fun. There's a big challenge out there; there's a lot to be done. It's not cut and dried. There's work for all of us analysts who like to sit around and think about ways to solve these problems.

Now, my fourth point has to do with what you might call the locus of decision-making authority regarding the sorts of management problems in a region like the Bering Sea Region or Beringia. There is, it seems to me, running through many of these discussions that we've had, a kind of a fundamental and persistent tension between, on the one hand, the desire to empower and to increase the voice of local participants, and in this case, particularly the permanent rather than the indigenous peoples in the region, that is to enhance the say, the voice that these people have, and on the other hand, the need for purposes of dealing with a large complex interdependent interconnected ecosystem to expand our horizons; to go to sort of larger and larger units with higher and higher levels of authority to make decisions regarding those units.

These are two, I think, very profound forces that work in the world today. And we see these quite generically, not just in the case of the Bering Sea Region,

but very much illustrated in the case of the Bering Sea Region where we have this tension between the sorts of concerns that Eric Smith talked about yesterday or today, where there is this desire, this sense of need on the part of the local people who are, after all, going to be the most immediately impacted by the decisions that are made, at least among the human constituents of the decision-making process, and who therefore have some legitimate concern, legitimate interest, in these things. And on the other hand, the need to construct international regimes; to construct not only enterprise at the level of national governments, but at yet in other levels taking into account the ecological interdependencies of the systems we're dealing with.

I don't think that there is any magic solution to this problem. I think it's one of the profound underlying concerns of our era. I think there is a great need for creativity. It seems like a dilemma, a paradox; a dilemma in the sense of something to which there isn't any really logical solution. But, there may be prospects for creativity in dealing with these kinds of things. Just one example that I'll give you that strikes me as an interesting one and worthy of further explanation is to develop further the concept that has been emerging, at least in the North American Arctic, of co-management. The co-management as a process; co-management as a system of structures, which allow us to get out of or to avoid or transcend some of the adversarial relationships that so often seem to grow up between the concerns of the local people or the representatives of the local people and representatives of a distant government. Co-management is not a panacea; it's a vehicle within which we have a lot of hard work to make things develop in a proper way. On the other hand, it gets us off dead-center. It puts us in a new, sort of, perspective. It sets aside some of the blinders and the sort of attitudes and underlying assumptions and concepts that we have been previously using, turns a new leaf -- turns a new page, so to say.

It seems to me that the efforts that have been made, with respect to co-management -- some of which are, by the way, already trans-boundary as in the case of the Porcupine/Caribou herd on the US/Canada relationship in the Northeastern part of Alaska and the Northwestern part of the Yukon -- are examples that should very much be explored by those who are thinking about Beringia and the shared resources of that region.

Now, my fifth point has to do what you might call the "dangers of cooperation". There's a tendency -- I know I think this way -- there's a tendency to think rather uncritically about cooperation. Cooperation is a good thing. We all ought to want to increase the level of peaceful intercourse and cooperation, and in general of course, we do, but there are some dangers to cooperation. These, I think, are illustrated (or at least may be potentially illustrated) in the Beringia situation. There is a sense in which the Ice Curtain that existed over a period of years -- while it separated people, nonetheless made Beringia a somewhat unattractive area for large-scale resource development. The people thought of this region -- whatever estimates might have been of its recoverable reserves or allowable harvest, and so on -- as a region that hopefully one shouldn't get too involved in because it was sort of politically marginal and politically somewhat unsafe. And so, there is this danger -- this concern -- that the melting of the Ice Curtain can clear the way for an onrush of what may turn out to be rather large scale industrial activities, and at the same time, concomitantly, as a result of that, lead to an influx of outsiders whose behavior is an unintended and unforeseen -- very often they produce ecological and, for that matter, socioeconomic impacts, whose results may prove very costly in terms of the protection or maintenance of the cultural values, and in some cases, the biological values of the region as well.

I have seen projections, for example, of the sorts of demographic changes that would be likely to follow any significant discovery of commercially valuable reserves of hydrocarbons in an area like the Navarin Basin of the Chukchi Plateau. The influx of outside technicians and workers who would be likely to result from that, in a place like St. Paul, if it were the Navarin Basin, might be in excess of the permanent residents of the community. This is an area of about 38 square miles, the total island of St. Paul, and you can easily see what that might do to the region. Some of you will remember, some years back in an earlier round of all of this stuff, when there was an interest in Navarin Basin -- Arco wanting to build a staging facility on St. Matthew Island, which is an island that's conveniently uninhabited by human beings, but which has a very large bird population, and a variety of other rather significant biological resources -- and the havoc that could wreak on an island of that kind.

What do I conclude from this? Not that cooperation in general isn't a good thing, but that cooperation needs to take the form or be orchestrated in terms of carefully crafted management and regulatory regimes; that we shouldn't just rush into cooperation on the notion that any cooperation; "any old cooperation is a darned good thing", and we should approve it just for the sake of having more cooperation. I think we're now at the stage where we're beyond that sort of uncritical response to the end of the Cold War, and are now in a position to think critically -- to pick and choose in respect to cooperation.

This leads to my sixth point: This has to do with conflicts of interest, among, particularly, the human users of the natural resources of the Bering Sea Region -- the point I want to make in this regard is a very simple one, and that is that conflicts of interests are unavoidable. They're a fact of life. The interests in the Bering Sea Region are quite extensive and varied. There are the indigenous peoples, or the subsistence users in general, the environmentalists, the fishing industry, the oil and gas industry, and (by the way) the military. I haven't heard very much about them over the last couple of days. Maybe it was talked about before I arrived yesterday. The military, I know on our side and I suspect on the other side as well, have some very highly developed interests in the Bering Sea Region, in which they're not about to cash in and give up without a struggle. It's inevitable that these interests will conflict. The rush of cooperation which has created a kind of euphoria in some people's minds will soon give way to a realization that these interests are likely to conflict in a variety of instances.

What can we do about this? Well, we can't get rid of conflicts of interest. The main thing we can try to do is to create processes, to establish mechanisms, that will maximize the likelihood that these conflicts can be dealt with in an effective and a fair, or equitable, or just fashion. What this means, I think -- the most important thing it means in this context is to try to make sure that the prevailing systems of government -- the prevailing system of management -- don't give unfair advantage to one or another of the interest groups likely to be involved in this system. This, I think, has been one of the recurrent complaints. In many respects, without going into detail, I think a legitimate one, of the indigenous peoples of these regions, not that they are surprised by conflicts of interest, but that they are distressed by the sense that there isn't a level playing field (an

American expression), by the sense that somehow or other they're the underdogs, that they are out in left field, and that it will be very difficult for them to receive any kind of fair opportunity to play in the game with respect to the interactions of the other interests, as they seek to promote and preserve their own concerns.

Now, let me finish up with my seventh point. This has to do with regime building. I think this maybe sort of brings it all together in terms of a lot of what we've been talking about. I write extensively on questions of regime formation, and I could give you a course of lectures on the subject. I really only want to make one point in this context, and that is to say that we have often discovered or often come to the conclusion that it is quite useful, from the point of view of the evolution and development of appropriate institutional arrangements for a region like the Bering Sea Region, to have some kind of an organizational forum that can serve as a spawning ground for new institutional arrangements and for the give and take -- for the interaction required to vet ideas about new institutional arrangements, to work out the bugs, to try to develop the most appropriate arrangement possible.

Jon Elkind was talking about the Regional Seas Program just a few minutes ago. One of the interesting things about that is the extent to which the United Nations Environment Program served as a spawning ground for the Regional Seas arrangement. It wasn't a substitute for Regional Seas arrangements, it was a forum in which, for various reasons, it was possible to interact vigorously and effectively to try to work out arrangements, by the way, including some very unlikely potential bedfellows as in the case of the Mediterranean Regional Seas Program. It led very creative thrust.

Back to international regime formation, a somewhat similar role, I believe, was played by the IUCN with respect to the development of the CITES Regime, a Convention on International Trade and Endangered Species.

So, we might want to think, if we were talking about the residue from this meeting, and where we go from here, what do we do about it? We might want to think about putting together a proposal for -- not all in one jump -- a new regime

for Beringia, but for some kind of an organizational forum that could, in an ongoing fashion, think through and work toward the development of various pieces and parts of a regime that might become a viable institutional arrangement for the region in the long term.

And so, we might want to talk about some notion of a Standing Conference on the Bering Sea Region, or perhaps to put it even more simply, we might want to think about recommending an International Beringia Commission.



Village children in Lavrentiya, USSR. Photo by Paul Haertel, National Park Service.

ALEXANDER TIMASHENKO

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I have several thoughts I'd like to share with you about what the international legal and administrative mechanisms could be -- how they could be worked out for the Bering Sea Region. But, first of all, we have to agree about the methodological approach that we're going to take to this problem as a whole. The usual accepted methodology is the ecosystem, comprehensive, regulated approach. Although there have been speeches made here at the conference that attach great importance to ad hocism, I agree with George Coggins, who was able to sum up what ad hocism means quite successfully. But I think, nonetheless, that ad hocism, as a side-effect of the comprehensive approach, can have its significance.

Another word about ad hocism -- the agreement that our presidents came up with should not hypnotize us. We should not fall into a state of holy ad hocism. The presidents are professional politicians and not professional lawyers, not to mention professional environmentalists, although the US President does say that he is an environmentalist.

The direction that our work is taking because of the decision made by our presidents will take us directly into the ideas that they expressed about how the park should be set up -- the actual mechanism for setting up the park. So, I want to repeat that we have to aim at an ecosystem comprehensive approach with legal arrangements in order to protect the Bering Sea Region. We need to take into account international practice, which can give us positive examples to follow for regulating our activities in the area. For instance, in '73 and '74, there was a Convention on the Baltic; in '76, there was on the Mediterranean -- this is a regional sea like Jon Elkind spoke of. The best example I can think of of a comprehensive approach is the Law of the Sea from 1982. It showed the well-known vulnerability that we have -- for the desire to solve everything together as a package in one document. So, that's why I think that the most acceptable methodology for us to use here would be an all-encompassing comprehensive management approach that would step-by-step become more detailed.

I would like to now go from the general to the specific in my remarks. What's a possible legal form of implementing our ideas? A lot of eloquent words have been said here about framework agreements. I do agree with this viewpoint, although, of course, some of the most shining examples of this was the 1979 Convention on Air Pollution, as well as the 1985 Convention. In addition to the pluses that Jon Elkind talked about with respect to the Framework Conventions, there are others. It is the beginning of a process that I call a "snowball process".

And coming to an agreement, even of a very general nature in this umbrella framework convention, a country has already made a commitment to regulate, to some extent or another, the area that the convention discusses. Our program and our conference has already defined the areas of cooperation, that we must find legal forms to express in our documents on the international park, which is a politically motivated area of cooperation. These are marine mammals, fishing, sea pollution, land pollution, and conservation of natural resources.

This very conference was a real shining example of international cooperation, and I think it was a real step ahead. But, in Russian, we have a proverb that says, "Even the sun has spots." Therefore, I would like to make one critical comment about this conference, and say that the spot on the sun of our conference is the one problem that did not get very much discussion -- it was not addressed by a specific panel; it was not well enough represented by the people who are those that really express it. What I'm talking about here is the special rights and interest of the traditional Native population.

I listened to the speeches given by the participants here, and I thought that the main Eskimo on the US side is Eric Smith, the head Eskimo. We also have two Eskimos on our delegation. One is Viktor Naumov, who is a Russian, not an Eskimo, and the other one is Dr. Aydaraliyev, from Kirghizia.

I am not doubting, of course, their professional qualifications, but still and all, I would like to see, together with them, some representatives up on the panels here. I see that there are some in the hall, but I'd like to see them up on the panel, representatives of the smaller peoples of the North. Of course, this whole question has to be given a certain degree of autonomy. In 1976 in Ottawa, there was a

Conference on World Conservation Strategy. There was a special panel that explored this issue of rights and interests of Native populations.

The Framework Convention could possibly look like this. First of all, the principle of Shared Living Resources has to be the principal element. These principles have been tested in international practice over a long period of time. Based on these principles, we could come up with our general commitments of equal use of the land and resources, trying to avoid harm to the environment, an impact assessment of the environmental impact, and responsibility for any damage incurred, a regulation mechanism for any conflicts, and we could also provide for the main areas of our future cooperation, that is the subject for protocols.

Here's something that Jon Elkind also talked about. I think we could look at having the participation of various international relationships, such as UNEP, for example. Besides these general commitments, all framework agreements contain a certain amount of more specific provisions. Here, we have an adequate degree of agreement between our countries that would allow us to formulate some specific provisions on scientific cooperation on information exchange. The organization -- setting up joint monitoring for the Bering Sea, and so on.

It's important, right at the beginning, and I agree with what Oran Young said in his very interesting report. He had a lot of interesting thoughts that he expressed, one of them was that we need to set up, right away, an organizational mechanism for continuous permanent cooperation between us. Drawing an analogy between the International Joint Commission on the Great Lakes, he even gave us a name for this organization that we could set up. I think I have the same ideas -- maybe I had them a little bit before him, maybe a little bit afterwards. But, I agree with him.

The USSR is in the Baltic Commission; it's in bilateral commissions for various sites that lie between USSR borders with other countries. The US is in this Great Lakes Commission and on boundary waters that it shares with Mexico. So, we do have a good enough bicycle -- we don't need to start over and invent a new one. So, we can now transfer it over into this northern area that we're talking about.

In addition to all this, this body that we're talking about, besides the fact that it would be a forum for permanent cooperation, it could also be a forum for the ongoing scientific cooperation that needs to develop between us. I think this could be drawn up in a protocol about a Framework Convention. This would only take half a page.

I would like to return to our conference here. I'm a semi-veteran of US/Soviet cooperation, and I think that it was a great accomplishment, a new form of cooperation. And I think that this is new experience that we need to spread the word about, and use again in the future. Of course, further application of this new form of cooperation has to be accompanied with new qualitative content to it. If we fantasize a little bit, we can imagine -- this is sort of science fiction here, because we don't have any agreements about this, but I can imagine that, not too far off, we would hold the Second Conference on the Bering Sea maybe in the northern part of the USSR. We could take another big step forward. We could discuss the already prepared draft -- or say an 'alternative draft' -- of the framework convention we're talking about and the protocols, or separate agreement about the International Park.

Of course, we're talking about a great deal of work that has to be done. Constance Harriman talked about this fact, and she mentioned a number of measures that I also agree with totally in principal of course. There is one important thing, and that is to coordinate the work of various working groups, various conferences, various scientific meetings, and things like that, because the challenge of coordinating is something very complex, both on an international level and an international level. Today's discussion between the members of our delegation shows that we don't have adequate coordination among our own selves. There is no internal inconsistency here. Both the lawyers and the scientists present are saying the same thing, that we must have a very clearly established communication between them. In this respect, I'd like to draw attention to the fact that the basis for this kind of coordination must be an understanding that, what experts in the field of natural sciences do, should not be done by lawyers. And, on the other hand, that the scientists should not try to do what lawyers are trained and paid to do.

Lyudmilla Bogoslovskaya has said, and I think she expressed it quite well, "We'll tell you what we need, and you tell us whether it's possible, how possible it is, and how to do it." I think that using this sort of a basis for exchange we could end up with a pretty good document. For its final version, it of course has to be written and drafted by lawyers who are professionals, then the corresponding demand for their services will be met.

Now for my last point. George Coggins, my old friend and colleague, gave us a somewhat simplified version, citing the Berlin Wall. I think there was a very small number of people that were captivated by the idea of tearing down the Wall. These people were motivated after a certain amount of political moves were made -- political progress was reached. So, I think the agreement reached by our two presidents, which now will be interpreted as agreement for starting a new type, and unique type of cooperation in the Bering Sea Region, makes it possible for us to hope to involve various government structures in our work. These are very high level structures, government agencies, and political, financial, material interests.

I hope that some of these thoughts that I have expressed today, I will have an opportunity to find turned into reality in the future.

REMARKS BY DINAH BEAR

The obvious question, at this point, is what comes out of the conference, and what next? Let me suggest two answers to that: First of all, all of us here are here because, in our normal professional capacity, we relate to some issue related to Living Resources of the Bering Sea. I would hope that, far beyond the context of Area 11, under the bilateral, that all of us, individually, have grown some and acquired some new knowledge and insight through the presentations over the last two and a half days. You may come away with a greater awareness of the importance of bringing Native people into early discussions, or a new understanding of a particular problem. My sense is that there has been a lot of that kind of experience.

The second issue, of course, is: What next for Area 11? Those of you who have worked with me on this conference know, I've never envisioned this as a one-stop conference moving onto another issue for the next conference. While Area 11 includes a lot of issues, my hope is that there will be some sustained activity related to Shared Living Resources of the Bering Sea.

There have been a number of excellent suggestions made during the course of the conference, all the way from things that are quite ambitious in terms of international frameworks and regimes to such things as joint work on environmental impact assessments, possibly as was suggested, joint environmental impact assessment work for the proposed international park, as well as the idea of comparing and arriving at environmental indicators that both countries can use in their environmental assessments, and a number of other really very, very good ideas.

Those ideas will be discussed in a meeting at the beginning of next week in New York of the core area of Area 11. Dr. Kolbasov and myself, I know, will be setting a time in the future talking about which of these particular ideas is a logical one to work on in the context of Area 11. Both Professor Kobasov and I also agree that, to the extent it would be useful to have the legal resources and administrative resources of Area 11 relate to the planning activity for the proposed International Beringia Park, we would be most pleased to be involved. I also hope

that the conference has stimulated and increased an awareness of the need and the difficulties of the scientific and the legal community communicating about these issues.

I want to express a lot of thanks to the interpreters. This has been a very difficult conference to interpret. I've been through about 9 -- 7 years now of meetings with simultaneous interpretation, and I think it's safe to say that the hours of this conference have been the longest, with probably the least advanced paperwork given to the interpreters. I really think they did a fantastic job.

[Applause for the interpreters]

[End of conference]

